A DISSERTATION ON AMNIOTIC FLUID INDEX IN POSTDATED PREGNANCIES AND ITS PERINATAL OUTCOME

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I hereby declare that this dissertation titled **AMNIOTIC FLUID INDEX IN POSTDATED PREGNANCIES AND ITS PERINATAL OUTCOME** is a bonafide and genuine research work carried out by me under the blessings and guidance of **Prof Dr.S.S.SUBHA, M.D., D.G.O., Professor and Head of Department,** Department of Obstetrics and Gynaecology, Government Mohan Kumaramangalam Medical College Hospital, Salem, Tamil Nadu, India.

Date:
Place: Salem

Signature of the Candidate
Dr.P.ANBARASI

GOVERNMENT MOHAN KUMARAMANGALAM

MEDICAL COLLEGE & HOSPITAL, SALEM

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This is to certify that this dissertation **AMNIOTIC FLUID INDEX IN POSTDATED PREGNANCIES AND ITS PERINATAL OUTCOME** is a bonafide work done by **DR.P.ANBARASI** in partial fulfillment of the requirement for the degree of M.S. in Obstetrics and Gynaecology, examination to be held in 2019.

Date:
Place:Salem

Signature of the Guide
Prof. Dr.S.S.SUBHA., MD., DGO.,
Professor and Head of Department,
Department of Obstetrics and Gynaecology,
Government Mohan Kumaramangalam Medical College& Hospital,
Salem, Tamil Nadu.

GOVERNMENT MOHAN KUMARAMANGALAM

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Date :

Place : Salem

Seal & Signature of the HOD
Dr.S.S.SUBHA, MD.,DGO.,
Professor and Head
Department of Obstetrics and Gynaecology
Government Mohan Kumaramangalam Medical College Hospital, Salem, Tamil Nadu, India

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Seal Signature of the Dean
DEAN
Government Mohan Kumaramangalam
Medical College and Hospital
Salem, Tamil Nadu, India

Date :

Place : Salem

GOVERNMENT MOHAN KUMARAMANGALAM

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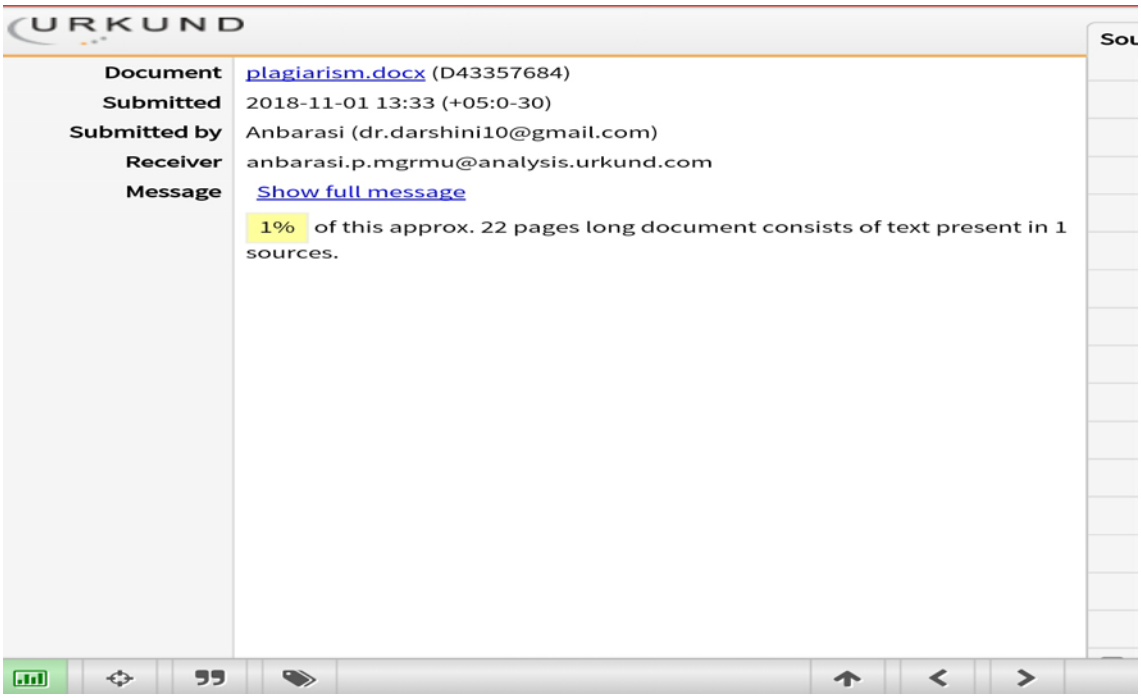

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CONTENTS

INTRODUCTION

The aquatic environment of the fetus has long remained a mystery to the patient and obstetricians, and the precise origin of the amniotic fluid is still not completely understood. The fluid is faintly alkaline with low specific gravity of 1.010,osmolarity of 250 mOsmol/litre-which is suggestive of fetal maturity. In early pregnancy it is colourless but at term it is pale straw coloured due to presence of exfoliated lanugo and epidermal cells from the fetal skin.It provides a protective factor for the growing fetus.It maintains body temperature and provides nutrients to the fetus. It gradually increases in volume with advancing gestational age followed by a significant decrease in volume after the estimated date of delivery.

Oligohydramnios is described as a condition with decreased amniotic fluid relative to gestational age.Its incidence is 2.3% .The incidence increases,upto 11% in postdated pregnancies.Assessment of amniotic fluid volume(AFI) by ultrasonogram is reliable. It is calculated as the sum of deepest vertical pocket in each quadrant of the uterus[1]. Manning et al.,defined oligohydramnios as the condition when the largest pocket on ultrasound in its broadest diameter measured < 1cm. Subsequently they revised the criteria to single pocket measuring 2cm in both vertical and horizontal planes.Phelan et al.,described amniotic fluid index by USG and explained that oligohydramnios is a condition when amniotic fluid index (AFI) was <= 5cm.But later Jeng et al., proposed a cut-off as 8 cm demonstrating increased incidence of meconium staining ,caesarean delivery for fetal

distress, abnormal fetal heart rate pattern and Apgar scores of 7 or less at one minute when AFI was < 8 cm .

Oligohydramnios is associated with increased maternal morbidity ,increased rate of induction of labour and caesarean section.It is also associated with adverse perinatal outcomes such as preterm delivery,low birth weight, fetal distress ,meconium passage, low APGAR score, neonatal resuscitation and NICU admission.Oligohydramnios can also be an idiopathic finding in a woman who had low risk pregnancies and no medical or fetal complication.The long term sequalae of oligohydramnios is pulmonary hypoplasia,potter's syndrome,club foot,club hand and dislocation of hip.During labour, the predominant mechanical function of amniotic fluid is to provide a cushion for the umbilical cord, without which there would be compression of the cord during labour[2].

Decreased liquor are associated with increased incidence of meconium –stained liquor and abnormal fetal heart rate patterns during labour,thereby increasing operative deliveries.Thus this study was conducted to find the significance of amniotic fluid index in determining the maternal and perinatal outcome in pregnant women who came postdated to our department ,admitted, and evaluated to find out the maternal and fetal outcome with regards to amniotic fluid index in those patients.

AIMS AND OBJECTIVES

The aim of this study is to study the role of AFI in postdated pregnancies thereby helping us to know the various perinatal morbidities associated with it,so as to increase the perinatal outcome by creating awareness among the antenatal women,AFI evaluation and vigilant intrapartum monitoring for this group of antenatal women who turn up postdated to the tertiary care centre.

In this study we compare various factors found to be in significant association with the amniotic fluid index in postdated pregnancies thereby increasing the perinatal outcome.

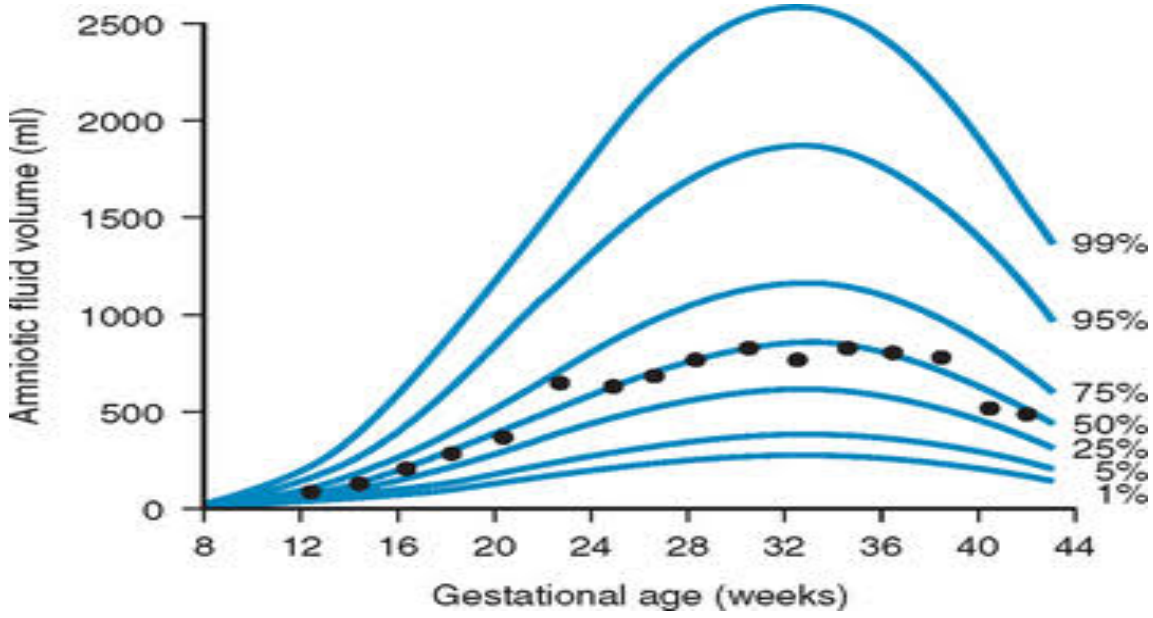
REVIEW OF LITERATURE

Most clinical studies support the fact that decreased amniotic fluid predicted by various methods identifies a postdated pregnancy with high risk.Fischer and colleagues(1993) attempted to prove which criteria was most predictive of normal versus abnormal outcome in postdated pregnancies. Most investigators found an increased risk of fetal distress in postdated pregnancies. Clement and co-workers(1987) described six postdated pregnancies in which AFI diminished abruptly over a day and among these six patients,one fetal death was reported.

The preferred name for an extended or postdated pregnancy is replaced now by the term called “postterm or prolonged pregnancy”.

Amniotic fluid is an ultrafiltrate of mother’s plasma. By the beginning of second trimester, the amniotic fluid volume becomes an extension of fetal extracellular space which diffuses through fetal skin.It is similar to fetal plasma and the main source of amniotic fluid is fetal urine. The human fetal urine production appears to be 1 to 2 lit/ day at term. Another source is fetal lungs which produces fluid that exits respiratory tract and enters amniotic compartment.AFI is inversely proportional to gestational age,and hence it is important to assess AFI to predict perinatal outcome in postdated pregnancies.

FIGURE-1 VARIATIONS OF AMNIOTIC FLUID VOLUME WITH GESTATIONAL AGE



FUNCTIONS OF AMNIOTIC FLUID :

- Maintains amniotic fluid pressure
- Essential for lung development.
- Facilitates movement of foetus
- Helps in development of gastrointestinal system
- Protects from trauma
- Prevents umbilical cord compression
- Bacteriostatic action
- Maintains temperature of foetus
- Provides nutrition to foetus

Prolonged pregnancies >42 weeks leads to decreased function of placenta and oligohydramnios. (Elliot 1961)

Leveno and colleagues (1984) found the risks to post term fetuses. Antepartum and intrapartum fetal distress were found to be the result of cord compression as a result of oligohydramnios. The volume of amniotic fluid decreases > 38 weeks and meconium passage in a reduced amniotic fluid results in thick viscous meconium which is swallowed by the fetus resulting in meconium aspiration syndrome. The incidence of clinical oligohydramnios and CTG revealing fetal heart abnormalities and an increase in the association with neonatal acidosis and low APGAR scores was found to raise as the sonographic estimates of amniotic fluid volume were decreased. So it is suggested that postdated pregnancy with reduced amniotic fluid volume should be allowed for a trial of labour with continuous cardiotocogram . In contrast AFI >5cm coupled with normal CTG has been linked with a low fetal death (<1/1000) within a week . Oz and associates (2002) used Doppler waveform and depicted fetal renal blood flow to be reduced in post term pregnancies in presence of oligohydramnios.

- Magnan EF and colleagues did a prospective longitudinal study on peripartum outcome in high risk pregnancies due to oligohydramnios and concluded that the fetuses complicated by oligohydramnios had increased risk of labour induction , intrauterine growth restriction and preterm delivery.[3]

- Active induction of labour, in uncomplicated term gestation with isolated oligohydramnios went into higher labour induction, operative vaginal delivery

and cesarean section rate. This had led to increased maternal risk with no difference in neonatal outcome.

- Locatelli A, Vergani P,Toso L, etal studied the effect of oligohydramnios on perinatal outcome in uncomplicated pregnancies at term and showed that oligohydramnios is independently associated with higher risk of low birth weight babies

- Baron and colleagues found 50% increase in variable decelerations during labour and a sevenfold increase in cesarean section rate in these women.

- Using an amniotic fluid index of <5 cm, Casey and co-workers cited an incidence of oligohydramnios of 2.3 percent in more than 6400 pregnancies undergoing sonography after 34 weeks at Parkland Hospital. Finally they found that this finding is associated with an increased risk of adverse perinatal outcome.

- Chauhan and associates performed meta-analysis of 18 studies comprising more than 10,500 pregnancies in which <5 cm. Compared with controls whose index was > 5 cm, women with oligohydramnios had a significantly increased 2.2 fold risk for caesarean section due to fetal distress and a 5.2 fold increased risk for a 5-minute apgar score of < 7. Cord compression during labour is also common with oligohydramnios.

- Garmel and co-workers found that well developed foetus associated with oligohydramnios prior to 37 weeks had a threefold increase in preterm birth but not an increase in growth restriction or fetal death. Serious deformities including amniotic band syndrome,amputation or abnormal positioning of hands and feet are present as baby is subjected to pressure from all sides, leading to a peculiar appearance- Potter facies (i.e. prominent epicanthal folds a flattened nose and low set ears) and musculoskeletal deformities

FIGURE-2 POTTER'S FACIES

FIGURE-3 AMNIOTIC BAND SYNDROME

- Mercer and Brown described 34 mid trimester pregnancies complicated by oligohydramnios defined by the absence of amniotic fluid pockets greater than 1 cm. Out of 9 fetus, one fourth of them had anomalies, and 10 of the 25 who were phenotypically normal either aborted spontaneously or stillborn. Out of 14 live born infants, 8 were preterm and 7 died. The six infants were delivered at term without complications

- Early onset of oligohydramnios is associated with foetal congenital anomalies and poor foetal outcome.

- According to Rezaie Kahkhaie K et al 2014.,maximum number of women were in the age group 25-35 year (46.9%).49% of women in oligohydramnios group were primigravida[1].Caesarean section was done in 20.2% for severe oligohydramnios.Fetal distress was noted in 9%,and there was increased incidence of SGA in oligohydramnios .There was significant rate of induction in of labour in postdated oligohydramnios.There was no difference in incidence of instrumental delivery APGAR score <7 at 0 and 5 minutes

- According to Manisha Sharma et al 2016.,maximum patients were primigravida and in the age group of 21-25 years . 40% of patients had AFI between 0-2 and 60% AFI between 3-5 cm.There were 4 intrauterine death .Labour was induced in 65% of cases with oligohydramnios.44% has undergone LSCS and most of the common indication for LSCS was fetal distress(85%).73% of patients with severe oligohydramnios AFI<5cms had birth weight <2.5 kg and 55% of babies

born to these cases had APGAR <7.There were 5 intrauterine deaths and still births among this group[4].

- Aneela et al (2009) described induction of labour was higher in case of oligohydramnios (41%)and caesarean delivery for fetal distress was 32%.The statistical difference was present between advanced gestational age ,presence of meconium,deceleration of fetal heart rate and chances of caesarean delivery.

- According to Tiparse A et al.,2017 .,non reassuring fetal heart sound was the most common complication associated with oligohydramnios in postdated pregnancies and the incidence of caesarean section was higher among them.Low APGAR score was seen in 25% and incidence of IUGR was 17.5% [5].

- Pak armed forces Med J 2015 described 50% of patients delivered by caesarean section,and the indication was most commonly fetal distress.Thus monitoring of AFI in postdated pregnancies can serve as useful predictor in perinatal outcome[6]

- Bansal et al 2015.,described 47% of cases delivered by LSCS,and there was higher rate of NICU admission(36%) of babies in severe oligohydramnios group[2].

- Asnafi et al 2015 showed that there were statistical significant differences in resuscitation of newborn comparing amniotic fluid index with gestational age which reflected the high morbidity in severe oligohydramnios group[7].

- Ahmar R et al 2018 described 20% of oligohydramnios was associated with postdated pregnancies apart from other causes.In this study nearly 44.44% went into spontaneous labour.80% of patients with non reassuring fetal heart rate pattern underwent LSCS.20% went in for NICU admission[8].

ASSESSMENT OF OLIGOHYDRAMNIOS:

Assessment of amniotic fluid index in postdated pregnancies is very important in decreasing perinatal morbidity and mortality.Amniotic fluid volume changes in pregnancy were studied by Brace and Wolf 1989 and their results were:

- Amniotic fluid volume rises progressively during gestation until 32 weeks.
- From 32 weeks to term, mean Amnitotic fluid volume is relatively constant (700-800ml)
- After 40 weeks there is progressive decline in Amniotic fluid volume at a rate 8% per week, with amniotic fluid volume of only 400ml at 42 weeks.

INVASIVE AND NON INVASIVE METHODS:

Amniotic fluid volume can be assessed by both invasive and noninvasive tests. Invasive tests like indicator dilution technique are accurate but difficult for clinical use. So we prefer the noninvasive sonographic assessment. The advantage of this method is that it can be done serially for follow up. The assessment of amniotic fluid volume could be subjective. Subjective assessment depends on the experience of the examiner.

A single criterion cannot be considered superior to others. But using AFI over single deepest pocket assessment can help in identifying more pregnancies with oligohydramnios. But there is no evidence of improvement of pregnancy outcome. (Nabhan, 2008). Oligohydramnios is usually taken as AFI 5cm or a single deepest pocket of amniotic fluid 2cm (ACOG, 2012)[9]

SONOGRAPHIC ASSESSMENT:

Semiquantitative assessment of amniotic fluid can be done by assessing the amniotic fluid pocket, amniotic fluid index (AFI), and amniotic fluid distribution.

SINGLE POCKET ASSESSMENT:

Chamberlain et al (1984) defined a normal maximal vertical pocket as 2 to 8 cm. Measurements < 2cm were called as oligohydramnios and > 8cm were hydramnios.

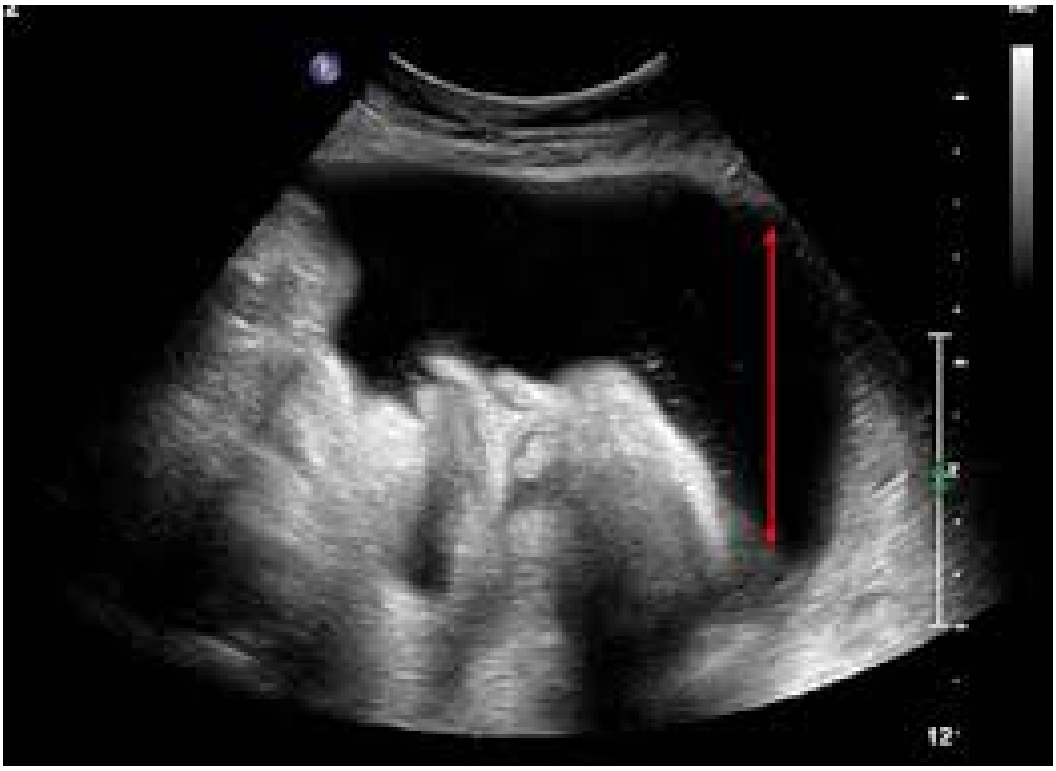
With normal maximal vertical pocket, the perinatal mortality is 4/1000. With decreasing amniotic fluid volume and maximal vertical pocket of 1-2cm it increases 13 fold, and with maximal vertical pocket (<1cm) the mortality increases to 47 fold.

Manning and platt (1981) measured the single deepest pocket of amniotic fluid free of fetal extremities and umbilical cord to assess amniotic fluid volume. This was defined later as normal amniotic fluid as one pocket that measures atleast 2cm in two perpendicular planes. (Manning, 1995)

Halperin et al and Crowley et al (1984) defined 3cm as the limiting value between for oligohydramnios. This is found to be a better cut off than 2cm in predicting adverse perinatal outcome.

In case of twin pregnancies, with twin twin transfusion syndrome, oligohydramnios is defined as a single deepest pocket having amniotic fluid measurement of 2cm. (Society for Maternal and fetal medicine, 2013) [10].

FIGURE-4 SINGLE VERTICAL POCKET MEASUREMENT



TWO DIAMETER POCKET:

Magann et al (1992) described amniotic fluid volume by multiplying vertical depth of MVP by its largest horizontal diameter.

- Oligohydramnios is defined as 0 to 15cm2,
- Normal as 15 to 50cm2 and
- Hydramnios as more than 50cm2.

FOUR QUADRANTS AMNIOTIC FLUID POCKETS:

Phelan, (1987) assessed amniotic fluid as summation of maximum vertical pocket of amniotic fluid in each of the four quadrants . He defined normal as 8.1 to 18cm, low as 5.1 to 8 cm, very low as 5cm, high as >18cm.

In condition were AFI <10cm, it is preferable to use mean of three AFI measurements.

With 15 – 24 weeks gestational age, AFI is calculated as summation of MVP in two halves of uterus only.

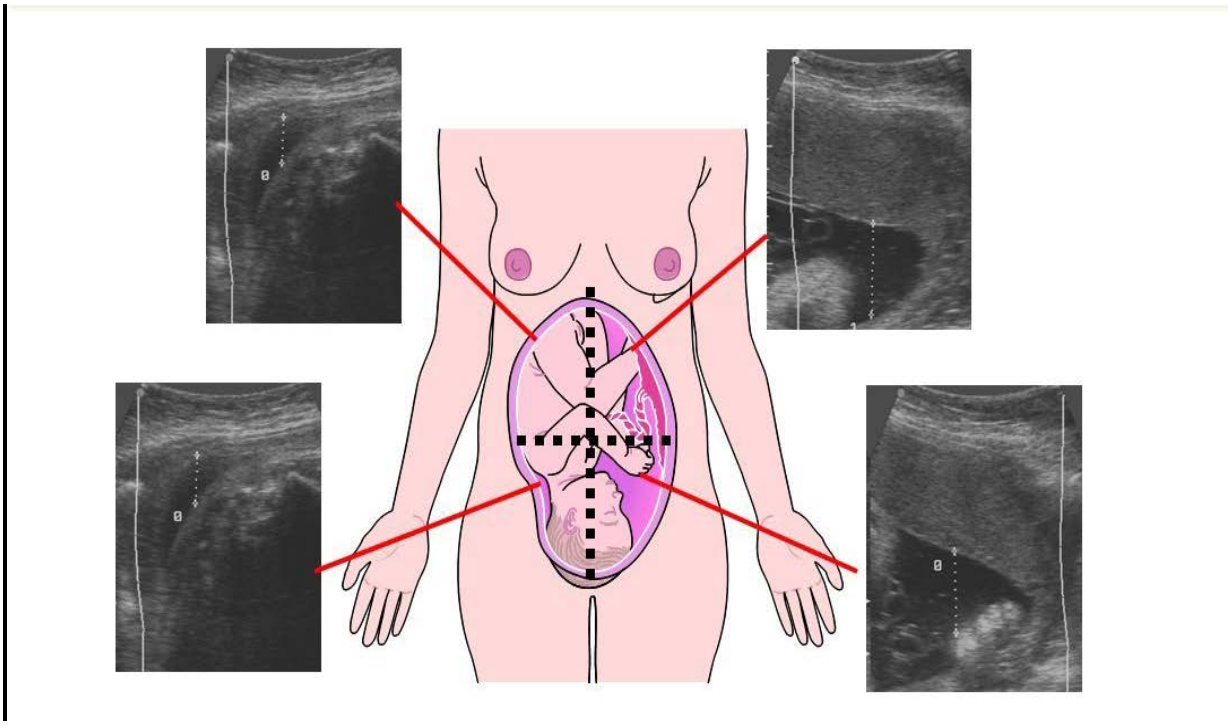
Abdominal pressure exerted by transducer can also cause changes. Low pressure results in 13% increase in amniotic fluid index, while high pressure could lead to 21% amniotic fluid decrease.

The diagnosis may also be based on Moore nomogram as a AFI below 5th percentile for gestational age. In this ,50th percentile of amniotic fluid index as 12.4cm in term pregnancy, and 5th, 10th, 90th, 95th percentile as 8.1, 9.0, 13.5, 15 14.4cm. With

28-42 weeks gestation, values < 5th percentile serve as the lower limit of normal amniotic fluid index. According to normative data of Moore and Cayle (1990) AFI below 5th percentile will have more adverse outcomes as compared to between 5th and 95th percentile.

Petrozella and colleagues in 2011 found that with gestational age 24-34 weeks, and AFI 5-8cm were not more likely to be complicated by maternal hypertension, stillbirth, neonatal death as compared to those with AFI > 8cm [11].

FIGURE-5 CALCULATING AMNIOTIC FLUID INDEX USING 4 QUADRANT TECHNIQUE



RELIABILITY OF AMNIOTIC FLUID VOLUME ASSESSMENT BY ULTRASONOGRAM:

Ultrasound assessment of amniotic fluid is a semi-quantitative method so there is a question of reliability. Normal volumes are best measured by this method whereas decreased /increased liquor are not accurately measured. In addition to this , other practical difficulties are inexperienced operator, foetal position, chances of transient change in amniotic fluid volume and the different criteria for abnormal amniotic fluid volume. Further there is no accurate cut off for predicting morbidity and mortality of foetus. With low or normal amniotic fluid volume ,an observer variation of 1.0 -2.0 cm is observed. With excess amniotic fluid, a 3 fold greater observer variation is found.

COMPARISON OF AFI AND SINGLE DEEPEST POCKET:

There are studies comparing amniotic fluid index and single deepest pocket giving conflicting results. According to Moses et al, neither the amniotic fluid index nor 2×1 pocket technique identifies a pregnancy at risk for an adverse perinatal outcome. In singleton uncomplicated post term pregnancies, the number of abnormal AFI was significantly more than the abnormal maximum pool depths. There was increasing trend towards ceasarean section particularly for fetal distress. Morris et al, found AFI less < 5 but not a single deepest pocket < 2 cm was associated with birth asphyxia, caesarean section and low apgar scores. These studies show that amniotic fluid index is superior to single deepest pocket in identifying at risk fetus.

NEED FOR THE STUDY

Adequate amount of amniotic fluid is essential for the normal growth of the foetus, as it cushions against trauma and other agitating factors. It prevents infections and is a primary source of foetal nutrients. In normal pregnancies,the volume of amniotic fluid increases with the period of gestation.The normal amniotic fluid index is 8-25 cm.Oligohydramnios poses a threat to the fetus as the umbilical cord gets compressed,thereby resulting in reduced blood flow to the fetus.It can also be an idiopathic finding in a low risk pregnant woman with no medical or fetal complication.Thus the perinatal morbidity and mortality increases resulting in increased instrumental deliveries and caesarean section rate.

Current practises rely high on the determination of amniotic fluid index for intrapartum monitoring. Thus it is wise enough to evaluate the amniotic fluid volume during any fetal assessment as a part of antenatal care or in labour room. This study reviews the effect of age,parity and gestational age on amniotic fluid index in postdated pregnancies.It evaluates the effect of AFI in postdated pregnancies in various aspects like Bishop's score,mode of induction,mode of delivery,colour of liquor,APGAR,NICU admission. The role and significance of AFI as an isolated predictor on the fetal outcome needs to be monitored vigorously in case of postdated pregnancies.The perinatal morbidity and mortality rate especially in this group is high,which provoked us to undertake this study.

MATERIALS AND METHOD

- **SOURCE OF DATA:** Patients admitted in Government Mohan Kumaramangalam Medical College, Salem, between January 2017 and December 2017, who fulfilled the inclusion and exclusion criteria
- **STUDY DESIGN:** Prospective study
- **SAMPLE SIZE:** About 300 antenatal women whose gestational age is >40 weeks
- **PLACE OF STUDY:** Government Mohankumaramangalam Medical College,Tamilnadu, Salem.
- **PERIOD OF STUDY**: January 2017-December 2017 (1 year)
- **CONSENT**: Written informed consent from the patient
- **ETHICAL CLEARANCE**: Nil
- **CONFLICT OF INTEREST**: Nil
- **FINANCIAL SUPPORT**: Nil
- **INCLUSION CRITERIA**:

  Pregnant woman in age group of 18-35 yrs with

  1) Single live intrauterine gestation

  2) Cephalic presentation

  3) Gestational age >40 completed weeks

  4) Intact membrane

5) Who have given written informed consent to participate in this study

- **EXCLUSION CRITERIA**:

1) Ruptured membranes
2) Amnioinfusion
3) Multiple gestation
4) Gestational age<40completed weeks
5) Associated fetal malformations
6) High risk pregnancies like hypertension, diabetes, chronic renal disease, preeclampsia, connective tissue disorders, RH-negative.
7) Abruption
8) PG synthetase inhibitors& ACE inhibitors therapy

Postdated pregnant patients fulfilling my inclusion and exclusion criteria were admitted.Detailed history were obtained from the patient about the socioeconomic status,booked/unbooked, the patient's age, obstetric code, gestational age, menstrual history, obstetric history.Obstetric examination carried out. Symphysio-fundal height measured. Fetal heart rates was recorded serially.It is reasonable to start antenatal surveillance between 41-42 weeks of gestation despite lack of evidences it improves the outcome. No single method has been recommended as superior in making of fetomaternal outcome.

Blood investigations – hemoglobin, blood grouping and typing, cell counts, blood sugar, urine analysis, VCTC, VDRL, USG, Doppler, CTG were done. Per Speculum and per vaginal examination was done to rule out draining per vaginum and confirmed intact membranes.

After taking informed consent from the patients ,AFI was measured ultrasonographically and for each case continuous CTG tracing was monitored. These women were followed till discharge.

Ultrasound examination to monitor fetal wellbeing and assess amniotic fluid index is done by Phelan's technique in which a curvilinear transducer was used. The abdomen was divided into four equal quadrants through the maternal midline vertically and an arbitrary transverse line between symphysis pubis and upper edge of uterine fundus. Transducer placement was parallel to maternal sagittal plane and perpendicular to maternal coronal plane. Image is frozen at the clear deepest pocket of amniotic fluid. This pocket was measured in a vertical direction. It is repeated in each of the four quadrants and summation of the four values gives the AFI of that patient and they are grouped according to their AFI.

Decision of delivery route was done as required. Some patients were already in spontaneous labour,some were subjected to induction of labour.If delivery is by caesarean section, the indication was recorded.

A study proforma was filled for each case.During delivery the colour of liquor was observed .APGAR of the baby was recorded at 1 minute and 5 minute.Birth weight of the baby recorded.The rate of NICU admission is recorded.The perinatal outcome is followed up for 28 days after delivery.

Thus, two strategies are recommended by ACOG 2014 to reduce the diagnosis of postterm and late-term gestations[12]

1) Accurate dating using firm clinical criteria (eg, known ovulation date or early ultrasound, the latter of which can reduce the rate of postterm pregnancy)

2) Membrane sweeping when there are no contraindications (eg,placenta previa and perhaps group B Streptococci carriage).

RESULTS

In this study conducted prospectively at our Government Mohankumaramangalam Medical College and Hospital,Salem,we selected 300 postdated patients who got admitted in our labour ward and have fulfilled the inclusion and exclusion criteria.

Our study mainly aims at identifying the causes of maximum number of postdated patients getting admitted in order to reduce the incidence of oligohydramnios associated with it which is the main cause of increased NICU admissions and adverse perinatal outcome identified during the followup of these babies.

Our study encompaased a total of 300 postdated antenatal women who fulfilled the inclusion and exclusion criteria and they were classified based on their AFI found using ultrasonogram.Various factors like socioeconomic status,age,parity,mode of induction of labour,CTG,colour of liquor,mode of delivery,caesarean section rate and the indication for LSCS,APGAR and weight of the baby,NICU admission rate and the final outcome of each baby delivered were followed up.These factors were tabulated and percentage of each calculated and compared with each factor which affects the perinatal outcome of a baby born to a postdated women. The collected data were analysed with IBM,SPSS statistics software 23.0 Version. To describe about the data descriptive statistics frequency analysis, percentage analysis were used for categorical variables and the mean & Standard Deviation were used for continuous variables. To find the significance in

categorical data Chi – Square test was used. In the above statistical tool the probability value .05 is considered as significant level.

Maximum number of patients were getting admitted from a low socioeconomic status who lacked the knowledge about the maternal and perinatal morbidity and mortality associated with postdatism.In our study,there were 96% of women from lower socioeconomic class (including socioeconomic class II,IV,V) indicating that they lack awareness about the risk of postdatism and oligohydramnios associated with it,thus increasing the perinatal outcome.

FIGURE 6-PIE CHART SHOWING THE SOCIOECONOMIC STATUS OF ANTENATAL WOMEN IN OUR STUDY

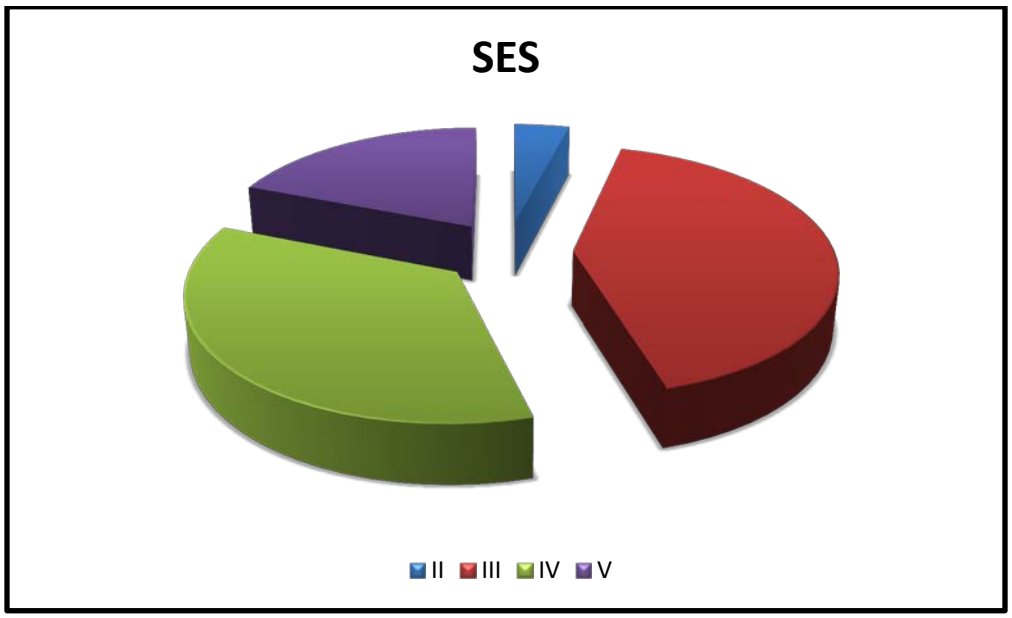


TABLE-1 SOCIOECONOMIC STATUS AND PERCENTAGE IN OUR STUDY GROUP

SOCIOECONOMIC STATUS	FREQUENCY	PERCENTAGE
II	12	4.0
III	125	41.7
IV	106	35.3
V	57	19.0
TOTAL	300	100.0

Education plays a main role in creating awareness among these low socioeconomic class people.This aids in reducing postdatism and oligohydramnios associated with it by early identification of third trimester oligohydramnios.

FIGURE 7-AFI IN RELATION TO SOCIOECONOMIC STATUS

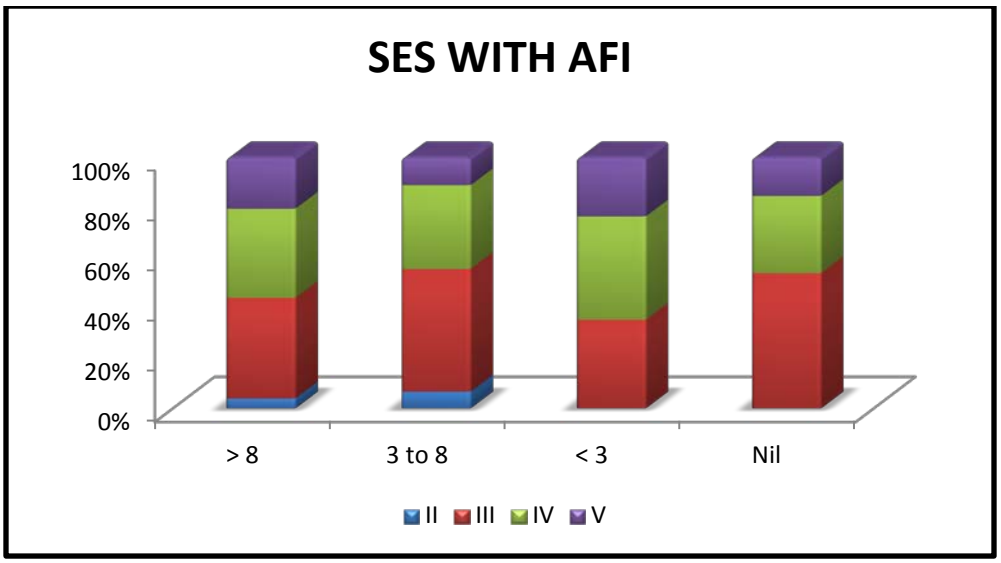


TABLE 2-PERCENTAGE OF AFI ASSOCIATION WITH SOCIOECONOMIC STATUS

SE STATUS	>8	3 TO 8	<3	NIL
II	4.0%	6.7%	0.0%	0.0%
III	40.0%	48.9%	35.3%	53.8%
IV	35.6%	33.3%	41.2%	30.8%
V	20.4%	11.1%	23.5%	15.4%

125 antenatal women (41.7%) were from the socioeconomic class III,followed by 106 women (35.3%) from the sovioeconomic class IV,followed by class V- 57 (19%), and then class II -12 (4%)

TABLE 3-COMPARING THE PERCENTAGES OF AFI GROUP IN RELATION TO SOCIOECONOMIC STATUS

					AFI		
			>8	3 TO 8	<3	NIL	TOTAL
SE STATUS	II	COUNT	9	3	0	0	12
		%	4.0%	6.7%	0.0%	0.0%	4.0%
	III	COUNT	90	22	6	7	125
		%	40.0%	48.9%	35.3%	53.8%	41.7%
	IV	COUNT	80	15	7	4	106
		%	35.6%	33.3%	41.2%	30.8%	35.3%
	V	COUNT	46	5	4	2	57
		%	20.4%	11.1%	23.5%	15.4%	19.0%
TOTAL		COUNT	225	45	17	13	300
		% WITHIN AFI	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 4-SIGNIFICANCE OF ASSOCIATION BETWEEN SOCIOECONOMIC STATUS AND AFI

	Value	df	Asymp. Sig.(2-sided)
Pearson Chi-Square	5.631	9	0.776
Likelihood Ratio	6.882	9	0.649
N of valid cases	300		

There was almost no significance noted in the association between Socioeconomic status and amniotic fluid index in postdated pregnancies.

FIGURE 8-PIE CHART SHOWING THE GESTATIONAL AGE IN WEEKS IN OUR STUDY

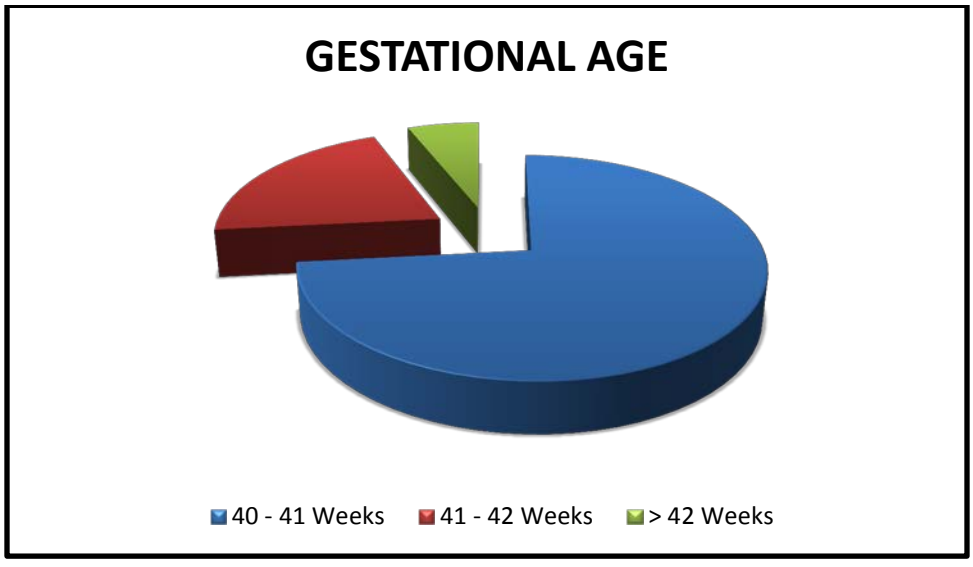


TABLE 5-PERCENTAGE OF GESTATIONAL AGE IN WEEKS

GESTATIONAL AGE	FREQUENCY	PERCENTAGE
40-41 WEEKS	220	73.3
41-42 WEEKS	62	20.7
>42 WEEKS	18	6.0
TOTAL	300	100.0

In our study,maximum number of postdated women 73.3% falls between the gestational age of 40-41 weeks ,followed by 20.7% coming between gestational age of 41-42 weeks and 6% from the gestational age of >42 weeks.

FIGURE 9-PIE CHART SHOWING AFI DISTRIBUTION IN OUR STUDY

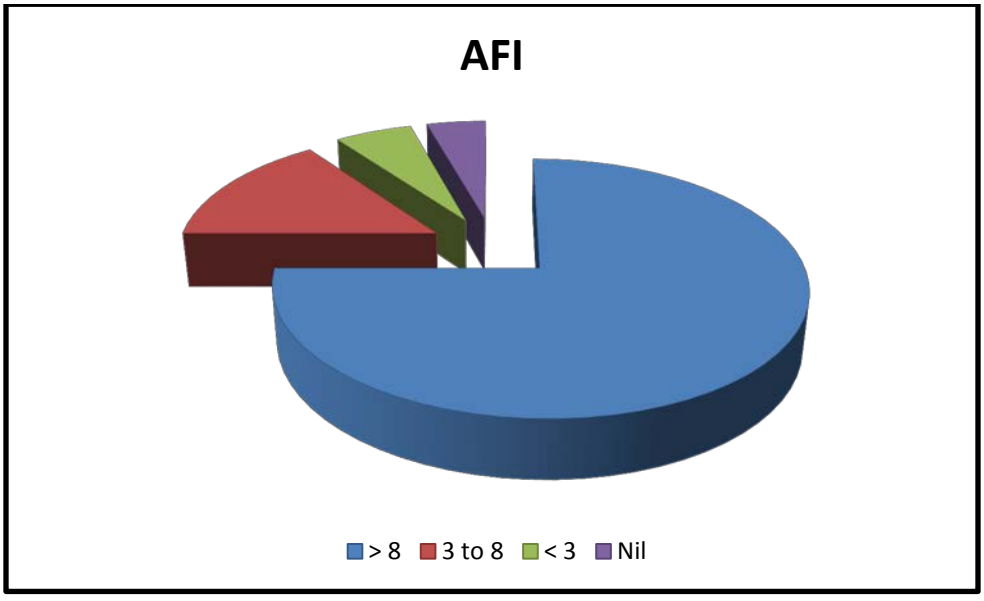


TABLE 6-PERCENTAGE OF AFI DISTRIBUTION

AFI	FREQUENCY	PERCENTAGE
>8	225	75.0
3-8	45	15.0
<3	17	5.7
NIL	13	4.3
TOTAL	300	100

In the present study,AFI was measured using ultrasonogram by measuring the single vertical pocket in each quadrant and classifed into 4 groups:

1.AFI >8

2.AFI 3 TO 8

3.AFI <3

4.AFI-NIL

Out of 300 people, 225(75%) falls in AFI group > 8, and 45 (15%)women falls in AFI group between 3-8, 17 (5.7%)women falls in AFI group <3,while 13 women had anhydramnios which constituted 4.3%

FIGURE 10-RELATION BETWEEN AFI AND MATERNAL AGE

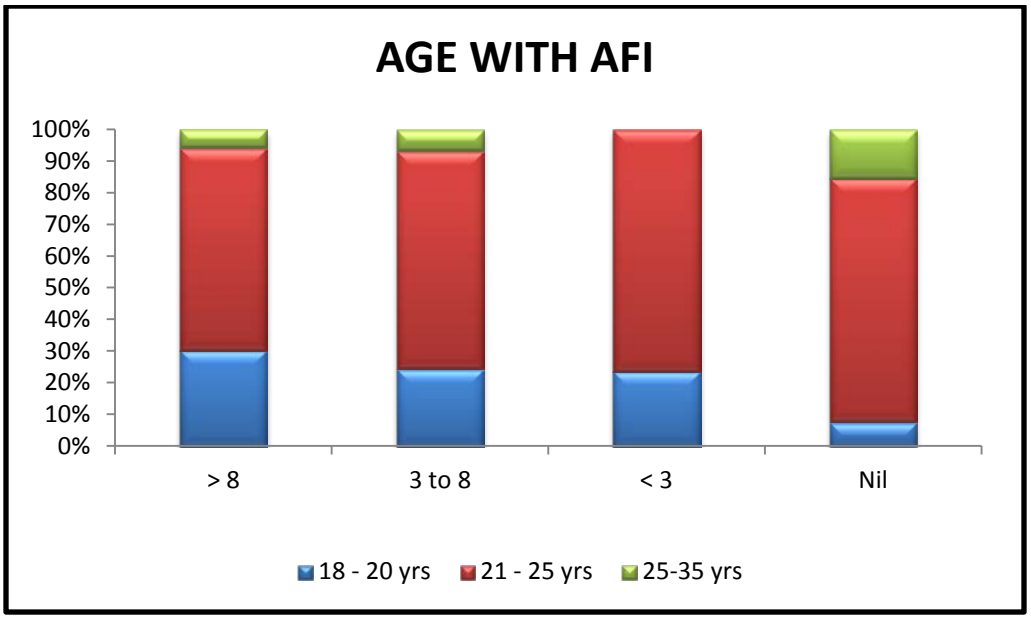


TABLE 7-PERCENTAGE OF AFI IN RELATION WITH MATERNAL AGE

AGE	AFI>8	AFI3-8	AFI<3	AFI-NIL
18-20 YRS	30.2%	24.4%	23.5%	7.7%
21-25 YRS	64.0%	68.9%	76.5%	76.9%
26-35 YRS	5.8%	6.7%	0.0%	15.4%

TABLE 8-MEAN MATERNAL AGE CALCULATION

	N	Minimum	Maximum	Mean	Standard Deviation
Age	300	18	35	23.21	3.762
Valid N(listwise)	300				

In our study,maximum number of antenatal women- 66% (198 out of 300 postdated women) were in the age group of 21-25 years indicating that postdated women were mostly in the younger age group and 76.9% of them had anhydramnios ,76.5% had AFI < 3, 68.9% with AFI 3 to 8, and 64% with AFI > 8.

The mean maternal age was 23.21 years.

TABLE 9-COMPARING THE PERCENTAGE OF AFI IN RELATION TO MATERNAL AGE

					AFI		
			>8	3 TO 8	<3	NIL	TOTAL
AGE	18-20YRS	COUNT	68	11	4	1	84
		%	30.2%	24.4%	23.5%	7.7%	28.0%
	21-25 YRS	COUNT	144	31	13	10	198
		%	64.0%	68.9%	76.5%	76.9%	66.0%
	25-35YRS	COUNT	13	3	0	2	18
		%	5.8%	6.7%	0.0%	15.4%	6.0%
TOTAL		COUNT	225	45	17	13	300
		%WITHIN AFI	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 10-SIGNIFICANCE OF ASSOCIATION BETWEEN MATERNAL AGE AND AFI

	Value	df	Asymp.sig.(2-sided)
Pearson chi-square	6.327[a]	6	0.388
Likelihood ratio	7.526	6	0.275
Liner by linear association	2.431	1	0.119
N of valid cases	300		

There was almost no significance noted in the association between age and amniotic fluid index in postdated pregnancies.

FIGURE 11-AFI IN RELATION TO PARITY

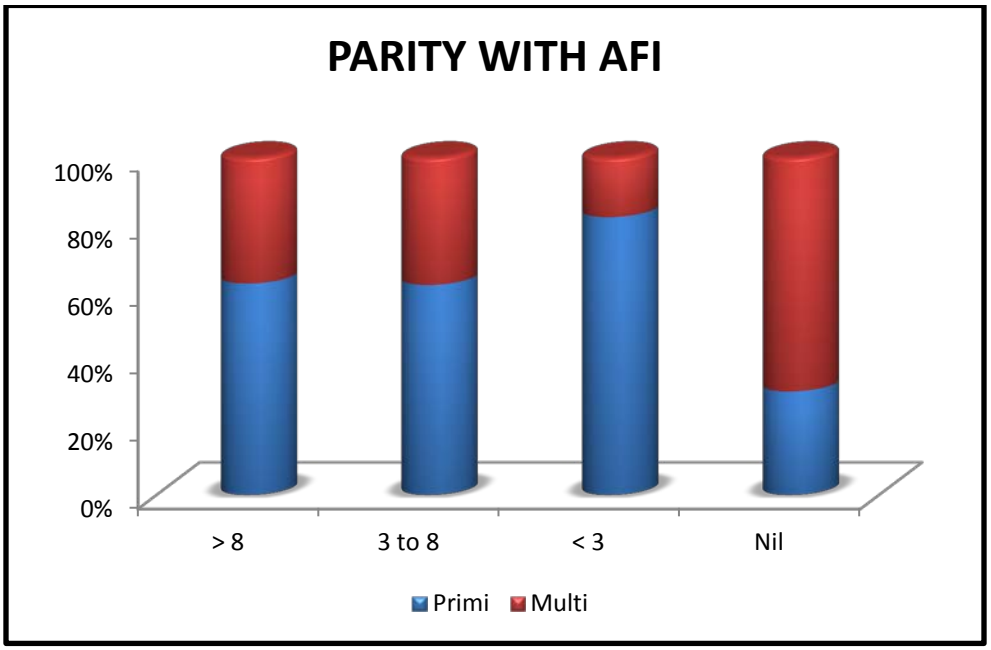


TABLE 11-PERCENTAGE OF AFI IN RELATION TO PARITY

	>8	3 TO 8	<3	NIL
PRIMI	62.7%	62.2%	82.4%	30.8%
MULTI	37.3%	37.8%	17.6%	69.2%

225/300 women had AFI > 8, 45 women had AFI 3 TO 8, 17 women had AFI < 3, and only 13 women had nil liquor (anhydramnios)

In our study,62.3% of postdated women fell under the primigravida group ,while only 37.7% comes under the multigravida group .

Maximum number of postdated primigravida (82.4%) had AFI < 3,and maximum of postdated multigravida women (69.25%) had AFI-NIL.

TABLE 12-COMPARISON OF AFI PERCENTAGE WITH PARITY

					AFI		
			>8	3 TO 8	<3	NIL	TOTAL
PARITY	PRIMI	COUNT	141	28	14	4	187
		%	62.7%	62.2%	82.4%	30.8%	62.3%
	MULTI	COUNT	84	17	3	9	113
		%	37.3%	37.8%	17.6%	69.25%	37.7%
TOTAL		COUNT	225	45	17	13	300
		% WITHIN AFI	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 13-SIGNIFICANCE OF ASSOCIATION OF PARITY WITH AFI

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi-Square	8.429[a]	3	0.038
Likelihood ratio	8.568	3	0.036
Linear by Linear Association	713	1	0.398
N of Valid cases	300		

There existed only a small significance between the parity and AFI in postdated pregnancy.

FIGURE 12-PERCENTAGE OF AFI WITH GESTATIONAL AGE

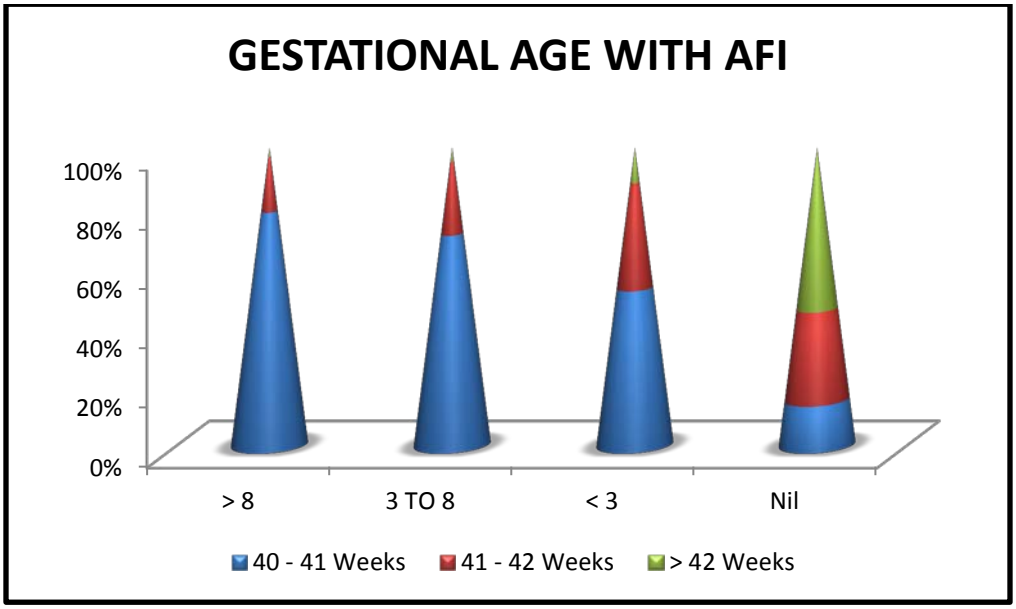


TABLE 14-COMPARING PERCENTAGE OF AFI WITH GESTATIONAL AGE

	>8	3 TO 8	<3	NIL
40-41 WKS	78.7%	71.1%	52.9%	15.4%
41-42 WKS	18.2%	24.4%	35.3%	30.8%
>42 WKS	3.1%	4.4%	11.8%	53.8%

Those women who presented to us from 40-41 weeks,majority of them had AFI > 8 and they constituted 78.7% (177)

In 41-42 weeks group, AFI < 3 constituted 35.3%. In > 42 weeks group, anhydramnios is seen in almost 53.8%

TABLE 15-COMPARISON OF AFI PERCENTAGE WITH GESTATIONAL AGE

					AFI		
			>8	3 TO 8	<3	NIL	TOTAL
GESTATIONAL AGE	40-41 WKS	COUNT	177	32	9	2	220
		%	78.7%	71.1%	52.9%	15.4%	73.3%
	41-42 WKS	COUNT	41	11	6	4	62
		%	18.2%	24.4%	35.3%	30.8%	20.7%
	>42 WKS	COUNT	7	2	2	7	18
		%	3.1%	4.4%	11.8%	53.8%	6.0%
TOTAL		COUNT	225	45	17	13	300
		% WITHIN AFI	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 16-SIGNIFICANCE OF ASSOCIATION BETWEEN AFI AND GESTATIONAL AGE

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi-Square	65.036[a]	6	0.0005
Likelihood Ratio	36.768	6	0.000
Linear by Linear Association	40.651	1	0.000
N of valid cases	300		

There exists a high significance by Chi Square test when comparing gestational age and AFI which is shown in the above table.

FIGURE 13-PERCENTAGE OF ONSET OF LABOUR WITH GESTATIONAL AGE

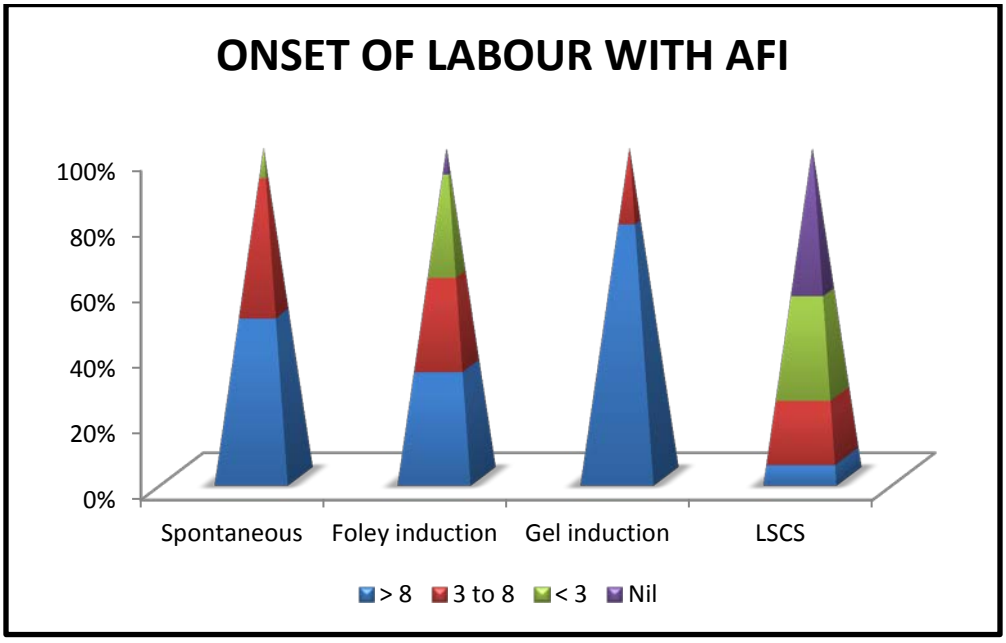


TABLE 17- PERCENTAGE OF ONSET OF LABOUR WITH AFI

	>8	3 TO 8	<3	NIL
SPONTANEOUS	32.0%	26.7%	5.9%	0.0%
FOLEY INDUCTION	32.4%	26.7%	29.4%	7.7%
PGE2 GEL INDUCTION	22.7%	6.7%	0.0%	0.0%
LSCS	12.9%	40.0%	64.7%	92.3%

Many patients almost 85 cases presented during admission with spontaneous onset of labour while the other group were assessed using modified bishop's score and induction of labour was done.

Mainly two methods of induction were tried in our tertiary care unit:

1)Foley catheter induction

2)PGE2 Gel induction

Totally 91 cases underwent foley induction out of which 32.4% cases (73) had AFI >8 PGE2 Gel induction was done mostly in the AFI group > 8 (51 out of 54 cases) After a trial of induction of labour, many progressed to active labour and delivered.

TABLE 18-COMPARING PERCENTAGE OF ONSET OF LABOUR WITH AFI

					AFI		
			>8	3 to 8	<3	NIL	Total
ONSET OF LABOUR	SPONTANEOUS	COUNT	72	12	1	0	85
		%	32.0%	26.7%	5.9%	0.0%	28.3%
	FOLEY INDUCTION	COUNT	73	12	5	1	91
		%	32.4%	26.7%	29.4%	7.7%	30.3%
	PGE2 GEL INDUCTION	COUNT	51	3	0	0	54
		%	22.7%	6.7%	0.0%	0.0%	18.0%
	LSCS	COUNT	29	18	11	12	70
		%	12.9%	40.0%	64.7%	92.3%	23.3%
TOTAL		COUNT	225	45	17	13	300
		%	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %

While some patients (70 cases) were decided for caesarean section based on various indications like:

- Fetal distress
- Failed induction
- Non progression of labour
- CPD/Mobile head

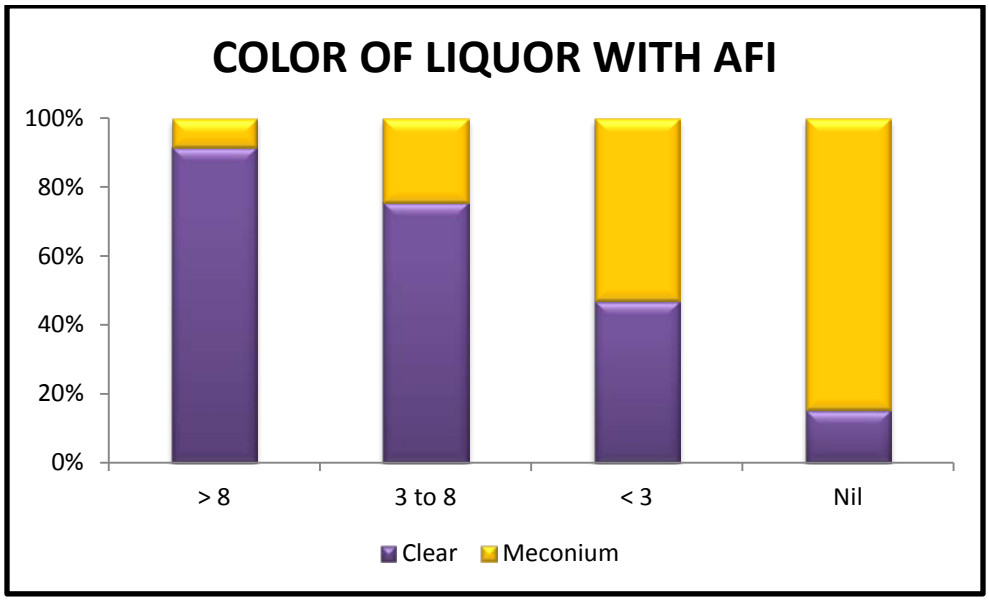
- Abnormal presentation
- Anhydramnios
- Previous LSCS

TABLE 19-SIGNIFICANCE OF ASSOCIATION OF AFI WITH ONSET OF LABOUR

	Value	df	Asymp.Sig(2-sided)
Pearson Chi Square	76.737[a]	9	0.0005
Likelihood Ratio	74.583	9	0.000
Linear by linear association	41.334	1	0.000
N of valid cases	300		

When comparing mode of induction of labour and AFI by Chi Square test,it is highly significant with P value of 0.0005

FIGURE 14-RELATION BETWEEN COLOUR OF LIQUOR WITH AFI



Out of 300 antenatal cases in our study,50 cases (16.6%) were having meconium stained liquor.The color of liquor is meconium stained as the gestational age increases and the amount of liquor decreases.Thus incidence of meconium staining is greater (84.6%) with anhydramnios, 53% in AFI < 3 group,24.4% in AFI 3 to 8 group,and very less (8.4%) in the AFI group > 8.

TABLE 20-PERCENTAGE OF COLOUR OF LIQUOR WITH AFI

	>8	3 TO 8	<3	NIL
CLEAR	91.6%	75.6%	47.1%	15.4%
MECONIUM	8.4%	24.4%	53.0%	84.6%

TABLE 21-COMPARING PERCENTAGE OF COLOUR OF LIQUOR WITH AFI

					AFI		
			>8	3 TO 8	<3	NIL	TOTAL
COLOUR OF LIQUOR	CLEAR	COUNT	206	34	8	2	250
		%	91.6%	75.6%	47.1%	15.4%	83.4%
	MECONIUM	COUNT	19	11	9	11	50
		%	8.4%	24.4%	53.0%	84.6%	16.6%
TOTAL		COUNT	225	45	17	13	300
		%	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 22-SIGNIFICANCE OF ASSOCIATION BETWEEN AFI AND COLOUR OF LIQUOR

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi Square	86.007[a]	5	0.0005
Likelihood ratio	58.866	5	0.000
Linear by linear association	68.971	1	0.000
N of valid cases	300		

The P value is 0.0005 when comparing AFI and meconium staining of liquor by Chi Square test and is highly significant.

FIGURE 15-RELATION BETWEEN AFI AND MODE OF DELIVERY

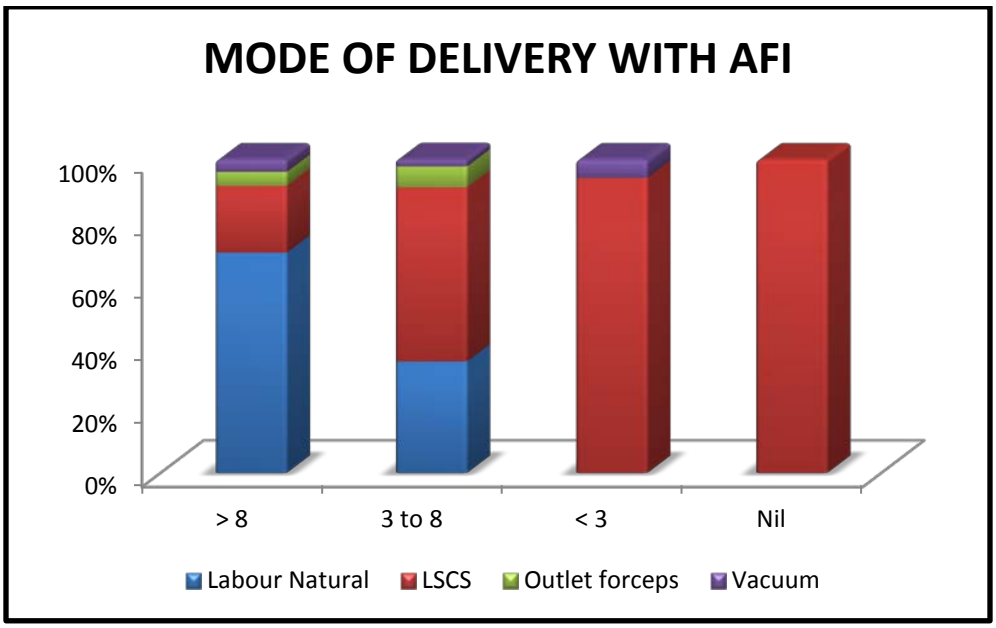


TABLE 23-PERCENTAGE OF MODE OF DELIVERY WITH AFI

	>8	3 to 8	<3	NIL
LABOUR NATURAL	70.2%	35.6%	0.0%	
LSCS	21.3%	55.6%	94.1%	100.0%
OUTLET FORCEPS	4.4%	6.7%		
VACUUM	4.0%	2.2%	5.9%	

174 out of 300 antenatal women (58%) delivered by labour natural while 102 out of 300 (34%) women delivered by LSCS. In AFI > 8 ,almost 70.2% delivered by labour natural, In AFI < 3 nearly 94.1% delivered by Lower segment caesarean section.

13 out of 300 (4.3%)antenatal women delivered by outlet forceps,while 11 out of 300 (3.7%)antenatal women delivered by ventouse/vacuum delivery.

TABLE 24-COMPARISON BETWEEN PERCENTAGE OF AFI AND MODE OF DELIVERY

					AFI		
			>8	3 TO 8	<3	NIL	TOTAL
MODE OF DELIVERY	LABOUR NATURAL	COUNT	158	16	0	0	174
		%	70.2%	35.6%	0.0%	0.0%	58.0%
	LSCS	COUNT	48	25	16	13	102
		%	21.3%	55.6%	94.1%	100.0%	34.0%
	OUTLET FORCEPS	COUNT	10	3	0	0	13
		%	4.4%	6.7%	0.0%	0.0%	4.3%
	VACUUM	COUNT	9	1	1	0	11
		%	4.0%	2.2%	5.9%	0.0%	3.7%
TOTAL		COUNT	225	45	17	13	300
		% WITHIN AFI	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 25-SIGNIFICANCE OF ASSOCIATION BETWEEN AFI AND MODE OF DELIVERY

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi Square	81.497[a]	9	0.0005
Likelihood Ratio	89.806	9	0.000
Linear by linear Association	22.219	1	0.000
N of valid cases	300		

High significance of P value 0.0005 was present between mode of delivery and AFI by Chi Square test.

FIGURE 16-RELATION BETWEEN AFI AND BABY WEIGHT

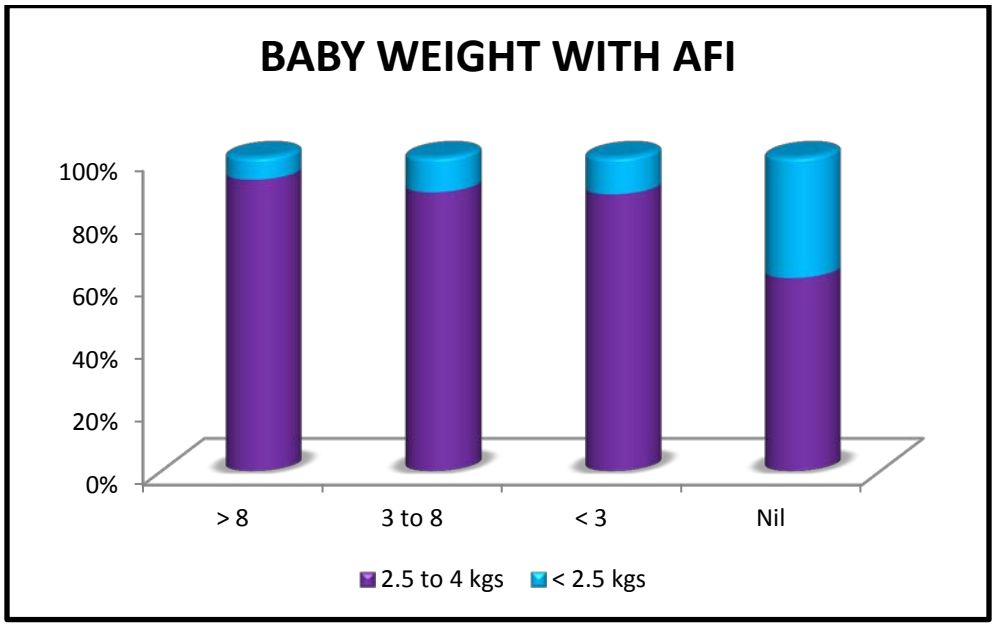


TABLE 26-PERCENTAGE OF AFI AND WEIGHT OF BABY

	>8	3 to 8	<3	NIL
2.5 TO 4 KG	92.9%	88.9%	88.2%	61.5%
<2.5 KG	7.1%	11.1%	11.8%	38.5%

272 out of 300 antenatal postdated women (90.7%) gave birth to babies of weight 2.5 to 4 kg, and 28 out of 300 women (9.3%) gave birth to < 2.5 kg babies out of which 38.5% of babies were in anhydramnios group,11.8% were in AFI < 3 group,11.1% were in AFI 3 to 8 group.and 7.1% of them had AFI > 5.

TABLE 27-COMPARISON BETWEEN PERCENTAGE OF AFI AND BABY WEIGHT

					AFI		
			>8	3 TO 8	<3	NIL	TOTAL
BABY WEIGHT	2.5 KG - 4 KG	COUNT	209	40	15	8	272
		%	92.9%	88.9%	88.2%	61.5%	90.7%
	<2.5 KG	COUNT	16	5	2	5	28
		%	7.1%	11.1%	11.8%	38.5%	9.3%
TOTAL		COUNT	225	45	17	13	300
		% WITHIN AFI	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 28-SIGNIFICANCE OF ASSOCIATION BETWEEN AFI AND BABY WEIGHT

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi Square	14.634[a]	3	0.0002
Likelihood Ratio	9.650	3	0.022
Linear by linear Association	10.820	1	0.001
N of valid cases	300		

By Chi Square test, there was high significance between AFI in postdated pregnancy and birth weight of the baby and the P value is 0.0002. IUGR or Fetal Growth Restricted Babies were mostly associated with oligohydramnios in postdated pregnancies. Anomalies are more common among this group.

FIGURE 17-RELATION BETWEEN AFI AND APGAR OF THE BABY

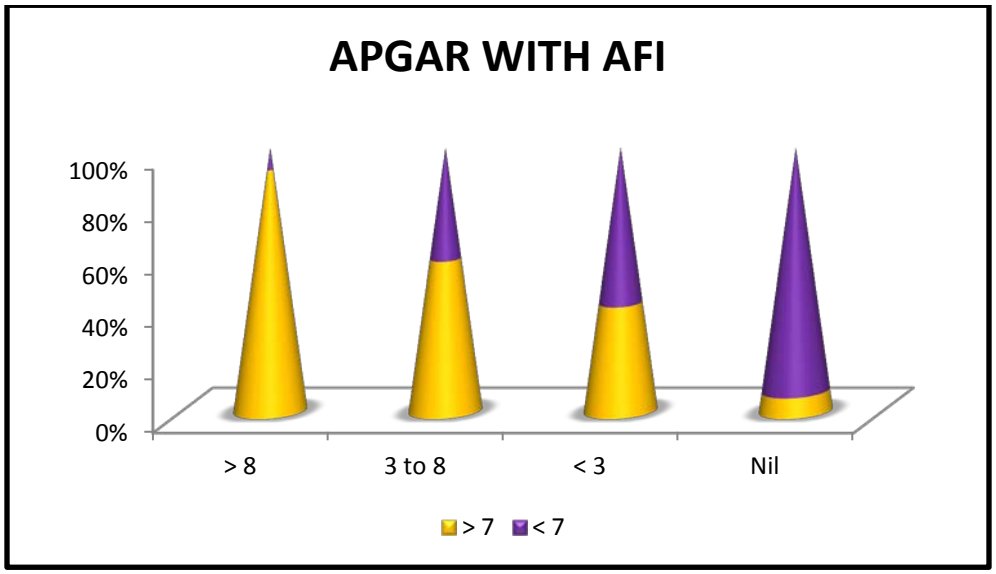


TABLE 29-PERCENTAGE OF AFI AND APGAR OF THE BABY

	>8	3 to 8	<3	NIL
>7	91.6%	57.8%	41.2%	7.7%
<7	8.4%	42.2%	58.8%	92.3%

The APGAR at 1 minute and 5 minutes of every baby delivered to postdated antenatal women at labour ward is observed.Paediatrician opinion called over beforehand for all cases in order to reduce the rate of adverse perinatal outcomes. It was observed that when AFI is > 8, 91.6% of babies had APGAR values > 7, But when AFI is reduced grossly or in anhydramnios the incidence of APGAR < 7 increases to 92.3%

240 out of 300 babies of postdated women (80%) had APGAR values of > 7 at 1 and 5 minutes,while 60 out of 300 babies of postdated women (20%) had APGAR values of < 7 at 1 and 5 minutes respectively.

TABLE 30-COMPARISON OF PERCENTAGE OF AFI WITH APGAR OF THE BABY

					AFI		
			>8	3 TO 8	<3	NIL	TOTAL
APGAR	>7	COUNT	206	26	7	1	240
		%	91.6%	57.8%	41.2%	7.7%	80.0%
	<7	COUNT	19	19	10	12	60
		%	8.4%	42.2%	58.8%	92.3%	20.0%
TOTAL		COUNT	225	45	17	13	300
		%WITHIN AFI	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 31-SIGNIFICANCE OF ASSOCIATION BETWEEN AFI AND APGAR OF THE BABY

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi Square	91.162[a]	3	0.0005
Likelihood Ratio	78.594	3	0.000
Linear by linear Association	89.643	1	0.000
N of valid cases	300		

There is high significance of association between AFI and APGAR values and the P value is 0.0005 by Chi Square test.

FIGURE 18-RELATION BETWEEN NICU ADMISSION AND AFI

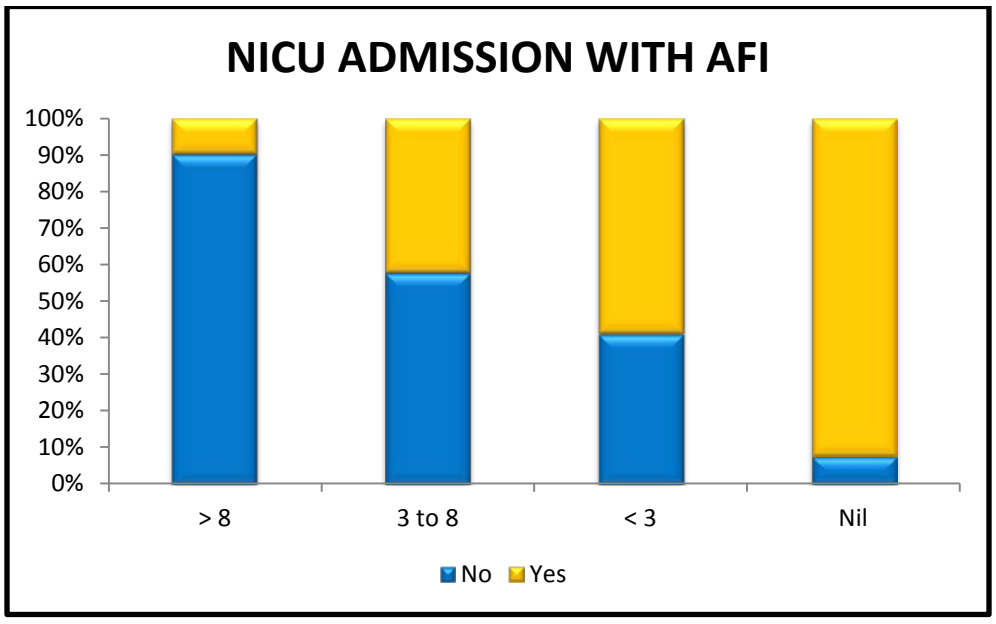


TABLE 32-PERCENTAGE OF AFI AND NICU ADMISSION

	>8	3 to 8	<3	NIL
NO	90.2%	57.8%	41.2%	7.7%
YES	9.8%	42.2%	58.8%	92.3%

High rate of NICU admissions of babies born to postdated antenatal women is due to high risk of oligohydramnios associated with it, increased risk of fetal distress during intrapartum fetal heart rate monitoring due to meconium staining of liquor, increased rate of instrumental delivery and LSCS,growth restricted babies. Congenital anomalies were excluded from our study.

92.3% in anhydramnios group were admitted to NICU.58.8% from AFI<3 group, 42.2% from AFI 3 to 8 group, and 9.8% from AFI > 8 group were admitted to NICU.All babies admitted to NICU required effective resuscitation.

TABLE 33-COMPARISON OF PERCENTAGE OF AFI AND NICU ADMISSION

					AFI		
			>8	3 TO 8	<3	NIL	TOTAL
NICU ADMISSION	NO	COUNT	203	26	7	1	237
		%	90.2%	57.8%	41.2%	7.7%	79.0%
	YES	COUNT	22	19	10	12	63
		%	9.8%	42.2%	58.8%	92.3%	21.0%
TOTAL	COUNT		225	45	17	13	300
	% WITHIN AFI		100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 34-SIGNIFICANCE OF ASSOCIATION BETWEEN AFI AND NICU ADMISSION

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi Square	83.801[a]	3	0.0005
Likelihood Ratio	72.921	3	0.000
Linear by linear Association	82.531	1	0.000
N of valid cases	300		

There existed high significance of association by Chi Square test ,between AFI and NICU admission rate in our present study.

In our study, 3 babies went in for neonatal death. Two of them was due to birth asphyxia/hypoxic encephalopathy, one neonatal death was due to Fetal growth restriction/sepsis.Thus the gross perinatal mortality in our study was 3 out of 300 babies born to postdated women .

TABLE 35-PERCENTAGE OF LIVE BIRTH AND NEONATAL DEATH IN OUR STUDY

	NUMBER	PERCENTAGE
LIVE BIRTHS	297	99%
NEONATAL DEATH	3	1%
TOTAL	300	100%

Now we look into , how the gestational age in postdated pregnancies affects the perinatal outcome of the baby.

FIGURE 19-RELATION BETWEEN GESTATIONAL AGE AND COLOR OF LIQUOR

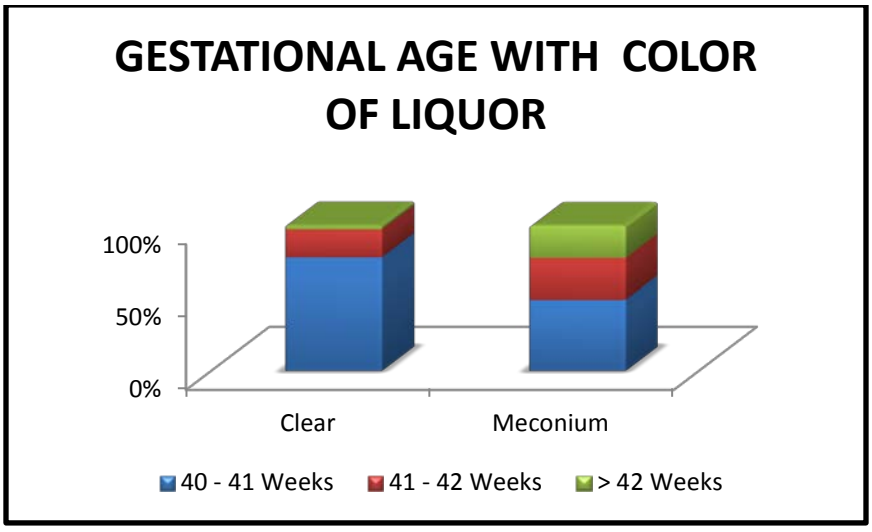


TABLE 36-PERCENTAGE OF COLOUR OF LIQUOR WITH GESTATIONAL AGE

	CLEAR	MECONIUM
40-41 WKS	78.0%	49.0%
41-42 WKS	19.2%	28.6%
>42 WKS	2.8%	22.4%

As gestational age increases,the incidence of meconium passage from fetus increases due to reduced amniotic fluid or oligohydramnios which alters the normal breathing of the baby by having a compression effect over the abdomen thereby limiting the movement of the diaphragm.

In our present study,higher rate of meconium stained liquor is seen 49% in gestational age between 40-41 weeks.

TABLE 37-COMPARISON BETWEEN PERCENTAGE OF COLOR OF LIQUOR WITH GESTATIONAL AGE

			CLEAR	MECONIUM	TOTAL
GESTATIONAL AGE	40-41 WKS	COUNT	195	25	220
		%	78.0%	49.0%	73.3%
	41-42 WKS	COUNT	48	14	62
		%	19.2%	28.6%	20.7%
	>42 WKS	COUNT	7	11	18
		%	2.8%	22.4%	6.0%
TOTAL		COUNT	250	50	300
		% WITHIN AFI	100.0%	100.0%	100.0%

TABLE 38-SIGNIFICANCE OF ASSOCIATION BETWEEN GESTATIONAL AGE AND COLOR OF LIQUOR

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi Square	33.174[a]	3	0.0005
Likelihood Ratio	25.668	3	0.000
Linear by linear Association	21.635	1	0.000
N of valid cases	300		

There existed a high significance between gestational age in postdated women to that of meconium staining of liquor due to oligohydramnios being associated with it.

FIGURE 20-RELATION BETWEEN GESTATIONAL AGE AND ONSET OF LABOUR

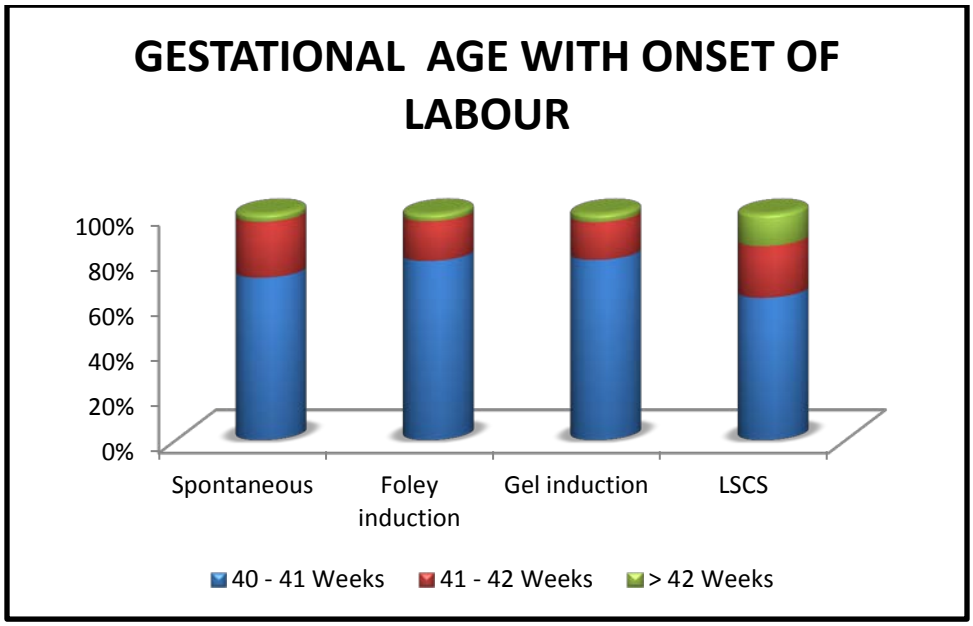


TABLE 39-PERCENTAGE OF ONSET OF LABOUR WITH GESTATIONAL AGE

	SPONTANEOUS	FOLEY INDUCTION	PGE2 GEL INDUCTION	LSCS
40-41 wks	71.8%	79.1%	79.6%	62.9%
41-42 wks	24.7%	17.6%	16.7%	22.9%
>42 wks	3.5%	3.3%	3.7%	14.3%

There was not much difference in onset of labour when compared to gestational age.

- 79.1% of patients in the gestational age group 40-41 weeks went in for Foley catheter bulb induction
- 79.6% of patients in the gestational age group 40-41 weeks went in for PGE2 gel induction
- 24.7% went in for spontaneous labour in the gestational age group 41-42 weeks
- 14.3% went in for caesarean section in the gestational age group > 42 week

TABLE 40-COMPARISON BETWEEN ONSET OF LABOUR AND GESTATIONAL AGE

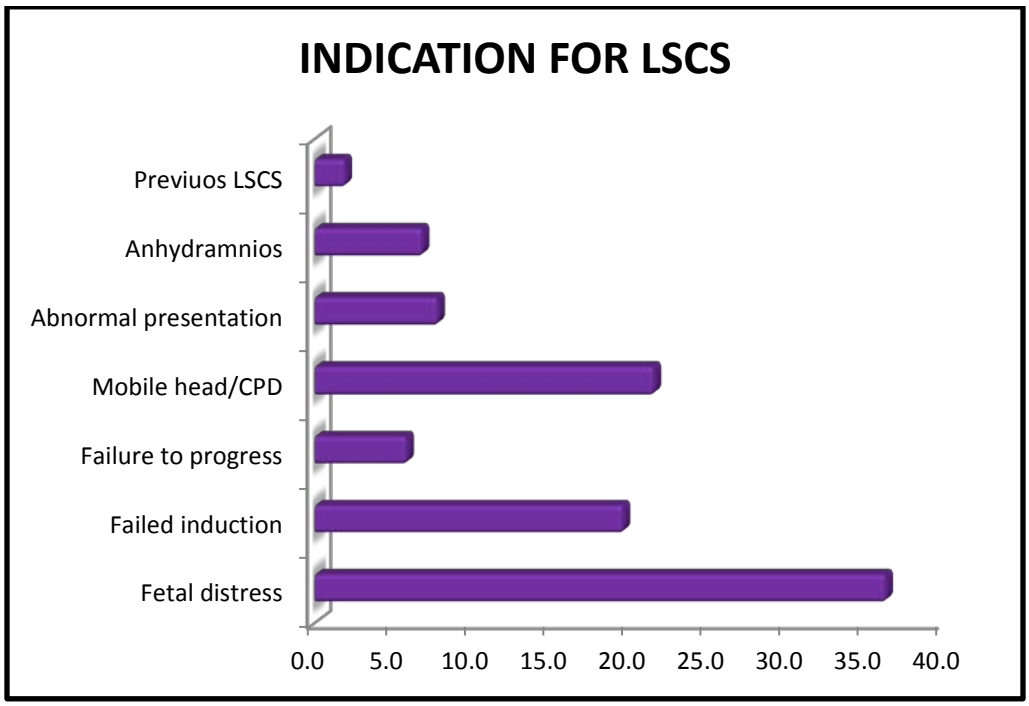
				Onset of labour			
			Spontaneous	Foley induction	Pge2 gel induction	LSCS	Total
Gestational age	40-41 WKS	Count	61	72	43	44	220
		%	71.8%	79.1%	79.6%	62.9%	73.3%
	41-42 WKS	Count	21	16	9	16	62
		%	24.7%	17.6%	16.7%	22.9%	20.7%
	>42 WKS	Count	3	3	2	10	18
		%	3.5%	3.3%	3.7%	14.3%	6.0%
TOTAL		Count	85	91	54	70	300
		% Within onset of labour	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 41-SIGNIFICANCE OF ASSOCIATION BETWEEN GESTATIONAL AGE AND ONSET OF LABOUR

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi Square	13.911[a]	6	0.031
Likelihood Ratio	12.140	6	0.059
Linear by linear Association	3.875	1	0.049
N of valid cases	300		

There exists only less significance by Chi Square test (P value 0.031) in finding the association between gestational age and the mode of onset and induction of labour

FIGURE 21-PERCENTAGE OF VARIOUS INDICATIONS FOR LSCS



Totally 70 postdated cases underwent LSCS out of 300 women.

In our study ,LSCS was done due to various reasons.More than one reason was present for each case,but the predominant cause was taken into consideration.

Before surgery,the need for immediate surgery,maternal and perinatal outcome,risk of continuing vaginal delivery is clearly explained to the patient and consent is obtained from the patient and attenders.

The common indication for LSCS was fetal distress which accounted to 36.3%,followed by mobile head/CPD which accounted to 21.6%,failed induction-19.6%,abnormal presentation-7.8%,anhydramnios -6.9%, failure to progress 5.9%,previous LSCS-2% .

FIGURE 22-PERCENTAGE OF INDICATIONS FOR LSCS WITH GESTATIONAL AGE

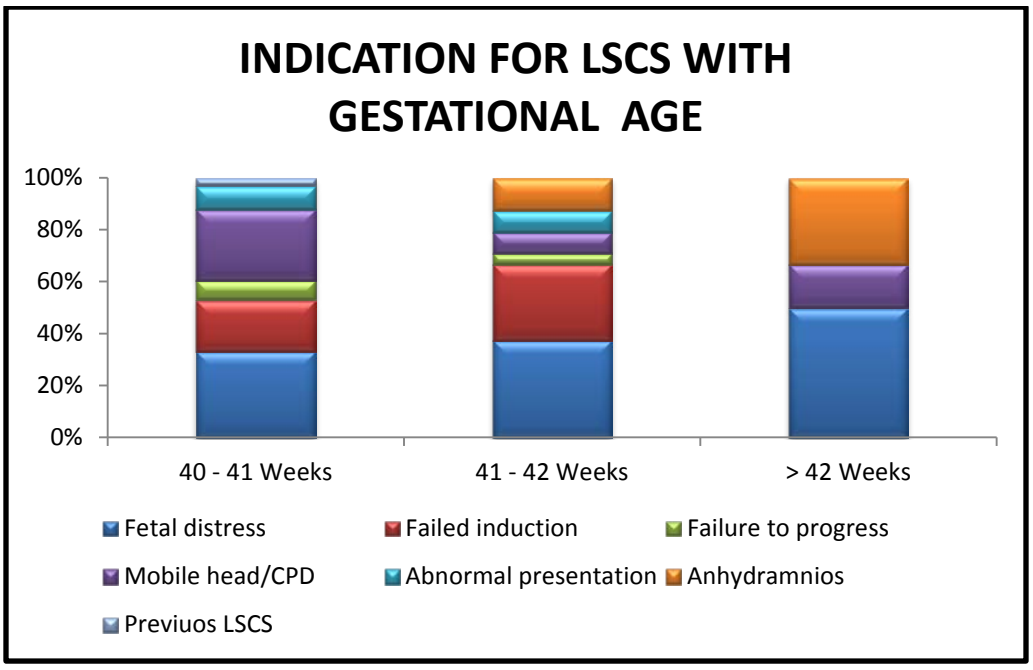


TABLE 42-COMPARING FREQUENCY AND PERCENTAGE OF VARIOUS INDICATIONS FOR LSCS

		Frequency	Percent	Valid percent	Cumulative percent
VALID	FETAL DISTRESS	37	12.3	36.3	36.3
	FAILED INDUCTION	20	6.7	19.6	55.9
	FAILURE TO PROGRESS	6	2.0	5.9	61.8
	MOBILE HEAD/CPD	22	7.3	21.6	83.3
	ABNORMAL PRESENTATION	8	2.7	7.8	91.2
	ANHYDRAMNIOS	7	2.3	6.9	98.0
	PREVIOUS LSCS	2	7	2.0	100.0
	TOTAL	102	34.0	100.0	
MISSING	SYSTEM	198	66.0		
TOTAL		300	100.0		

TABLE 43-RELATION BETWEEN GESTATIONAL AGE WITH INDICATIONS FOR LSCS

	40-41 WKS	41-42 WKS	>42 WKS
FETAL DISTRESS	33.3%	37.5%	50.0%
FAILED INDUCTION	19.7%	29.2%	0.0%
FAILURE TO PROGRESS	7.6%	4.2%	0.0%
MOBILE HEAD/CPD	27.3%	8.3%	16.7%
ABNORMAL PRESENTATION	9.1%	8.3%	0.0%
ANHYDRAMNIOS	0.0%	12.5%	33.3%
PREVIOUS LSCS	3.0%	0.0%	0.0%

We found in our study that the most common indication among all gestational age groups was only fetal distress ,(33.3% in 40-41 weeks gestational age,37.5% in 41-42 weeks gestational age,50% in > 42 weeks gestational age group) which shows the importance of effective intrapartum fetal heart rate monitoring

Thus in our institution, Fetal distress was the most common indication for caesarean section in case of postdated women.

Inspite of proper antenatal counseling regarding earlier admission of previous history of caesarean section,3 % of cases were having previous history of LSCS still presented late in the gestational age group of 40-41 weeks to our hospital.

TABLE 44-COMPARING PERCENTAGE OF VARIOUS INDICATIONS FOR LSCS WITH GESTATIONAL AGE

				Gestational age		
			40-41wks	41-42wks	>42wks	Total
Indication for LSCS	Fetal distress	Count	22	9	6	37
		%	33.3%	37.5%	50.0%	36.3%
	Failed induction	Count	13	7	0	20
		%	19.7%	29.2%	0.0%	19.6%
	Failure to progress	Count	5	1	0	20
		%	7.6%	4.2%	0.0%	5.9%
	Mobile head/CPD	Count	18	2	2	22
		%	27.3%	8.3%	0.0%	7.8%
	Abnormal presentation	Count	6	2	0	8
		%	9.1%	8.3%	16.7%	21.6%
	Anhydramnios	Count	0	3	4	
		%	0.0%	12.5%	33.3%	6.9%
	Previous LSCS	Count	2	0	0	2
		%	3.0%	0.0%	0.0%	2.0%
Total		Count	66	24	12	102
		% within gestational age	100.0%	100.0%	100.0%	100.0%

TABLE 45-SIGNIFICANCE OF ASSOCIATION BETWEEN GESTATIONAL AGE AND INDICATIONS FOR LSCS

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi Square	28.552[a]	12	0.0005
Likelihood Ratio	31.855	12	0.001
Linear by linear Association	0.297	1	0.586
N of valid cases	102		

There was a high significance by Chi Square test, with P value of 0.0005 between the various indications of LSCS and gestational age .

Thus by this study we are able to predict the perinatal outcome by assessing AFI using ultrasonogram which is a simple bedside noninvasive investigation being done for all antenatal patients to identify at risk patients who needs further careful monitoring intrapartum.Overall the perinatal morbidity and mortality is markedly increased in patients with oligohydramnios in postdated pregnancies. Determination of AFI must be used as an adjunct to other fetal surveillance methods.By proper early third trimester assessment,we easily identify patients who need more care and early termination is done in case of oligohydramnios ,thereby avoiding the rate of postdated pregnancy admissions and unnecessary caesarean section.

DISCUSSION

Postdated pregnancy is a high risk obstetric condition. Oligohydramnios was defined as Amniotic fluid index (AFI) ≤5 (or less than the 5th percentile) or the absence of a pocket measuring at least 2 × 1 cm3. [27] It is most commonly associated with postterm pregnancies.

The perinatal mortality and morbidity are increased in several folds when pregnancy is advanced beyond term i.e. 40 weeks. The actual physiologic mechanism responsible for a prolonged pregnancy has not been known and remains obscure.

SOCIO-ECONOMIC STATUS:

The incidence of prolonged pregnancy is, inversely related to the pregnant women's socio-economic status and education. This means that's the lower her level of education or socio-economic status, the greater the likelihood she would have a postdated pregnancy.The risk of postdated pregnancy in the subsequent birth is increased two to three folds and is increased 4 times after two prior postterm pregnancies.

In our study maximum number of patients., 41.7% come from socioeconomic class III and the P-value by Chi square test is 0.776 and not significant which is comparable to the study by Tiparse et al where the lower socioeconomic class accounted to nearly 112 out of 200 patients.,that is 58.5% of the population.[5]

MATERNAL AGE:

In India 20 to 25 yrs is the reproductive age group.Many studies agreed that advancing maternal age does not appear to influence the incidence of postdated pregnancy. In our study,maximum postdated women lie in the age group of 21-25 yrs and the P-value is 0.388 by Chi square test which is comparable with the study done by Tiparse et al 2017 and Gita guin et al 2011.[5,14]

The mean age in our study is 23.21 years,which is comparable to study done by Kaur T et al in which it was 25.8 years.[15]

PARITY:

Similar to maternal age, parity does not appear to influence postdated pregnancy With maternal age held constant, prolonged pregnancies were encountered more frequently among primigravidas and women of high parity (>4). In present study maximum number of patients were primigravida (62.3%). This is similar to study done by Jagatia K et al in which 52% were primigravida.[16]

In our study,the P value is <0.038 by Chi square test which is not much significant,and hence there is no association between parity and amniotic fluid index which is comparable to the study done by Tiparse et al 2017 and Akhter et al 2014.[5,17]

GESTATIONAL AGE:

Oligohydramnios can develop in any trimester, although it is more common in third trimester.[18]

In our study, 94% of the antenatal women falls between 40 to 42 weeks which is comparable with the study by Akhter et al 2014 where 91% of post dated women falls between 40 to 42 weeks.[17]

Induction of labour should maximize the number of women progressing to the active phase of labour while maintaining a low incidence of adverse maternal and neonatal outcomes. Bishop's score helps in identifying adverse peinatal outcome.Failed induction is defined as the inability to achieve cervical dilatation >4 cm after 12 ± 3 h of oxytocin administration (with a goal of 200–225 Monte Video Units or 3 contractions/10 min). A higher incidence of maternal and fetal morbidity especially with an increased risk of cesarean section has been associated with induction of labour .

BISHOP'S SCORE:

Bishop's score is used to identify unfavourable cervix and assess the favourability of cervix in induction of labour that ends in best perinatal outcome avoiding increased rate of caesarean section.

FIGURE 23- BISHOP'S SCORE

Parameters	Score			
Cervix	0	1	2	3
Dilatation (Cm)	Closed	1-2	3-4	5+
Effacement(%) Or Cervical Length (Cm)	0-30 Or >4	40-50 or 2-4	60-70 or 1-2	≥ 80 or <1
Consistency	Firm	Medium	Soft	-
Position	Posterior	Midline	Anterior	-
Head Station	- 3	- 2	- 1, 0	+1, +2

ONSET OF LABOUR:

Perinatal mortality and morbidity was increased in postdated pregnancy which could be reduced by timely and judicious induction of labour.

Among 300 patients in our study, 85 patients (28.3%) went in for spontaneous labour. 145 patients (48.3%) went in for induction of labour and 70 patients (20.3%) were taken up for LSCS.

The P value is 0.0005 which is statistically significant. In a similar study conducted by Ahmar et al 2018, 44.44% patients went in for spontaneous labour, 42.22% patients went in for induction of labour, 13.33% patients were taken up for LSCS.[8]

ACOG concludes that “Induction of labor between 41 0/7 and 42 0/7 weeks *can be* considered” and “Induction of labor after 42 0/7 weeks and by 42 6/7 weeks of gestation *is recommended*, given evidence of an increase in perinatal morbidity and mortality.”[12]

FOLEY INDUCTION OF LABOUR:

It is a safe and simple procedure with low risk of infection ,where the foley bulb is inflated with 30-60 ml of sterile water to dilate the cervix increasing tissue response to prostaglandins and oxytocin.

PGE2 GEL INDUCTION OF LABOUR:

It is a well accepted method to ripen the cervix (preferably unfavourable cervix) by inserting the gel into the posterior fornix or the intracervical region using a plunger. Fetal heart rate monitoring is done prior and after the procedure . A maximum of 3 doses (1.5 mg) is permitted for induction of labour with 6 hours interval.

FIGURE 24-FOLEY INDUCTION OF LABOUR

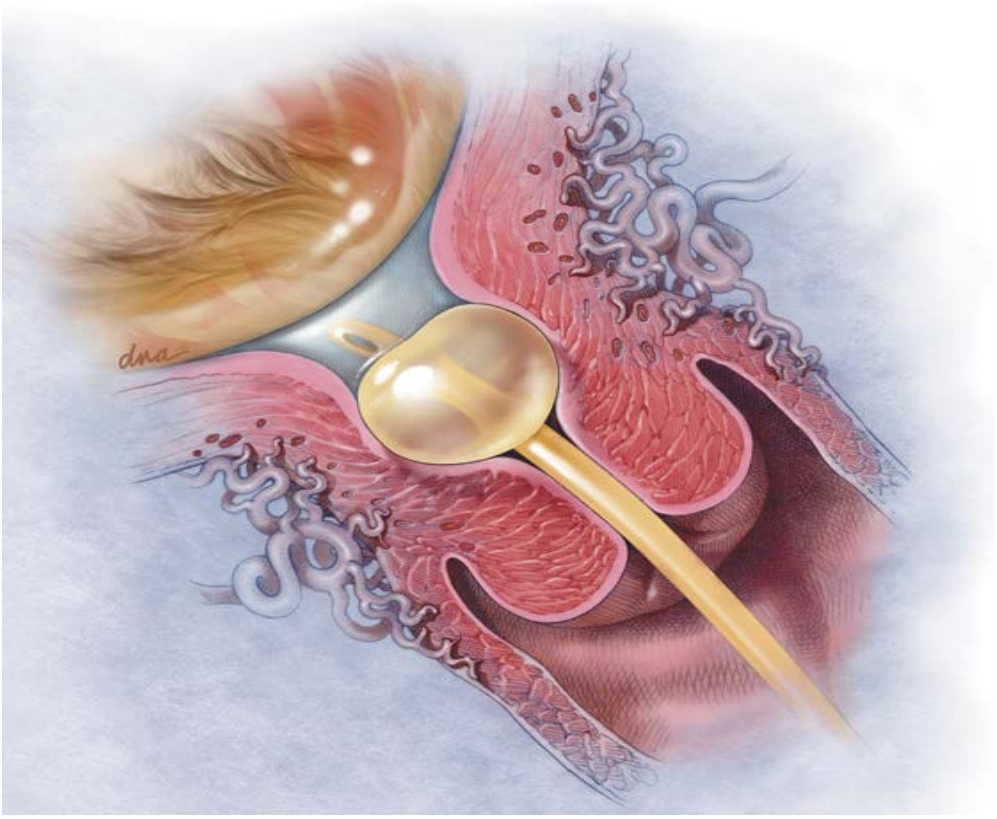


FIGURE 25-PGE2 GEL INDUCTION OF LABOUR

MECONIUM STAINING AND AMNIOTIC FLUID INDEX IN POSTDATED PREGNANCY:

The incidence of meconium staining in AFI>8 is 8.4%,

24.4% in AFI 3 to 8,

53%in AFI<3,and

84.6% in anhydramnios.

The P value is 0.0005 which is highly significant in our study.

According to ACOG 2012,amnioinfusion does not prevent meconium aspiration,however it remains a treatable approach for repetitive variable decelerations. ACOG 2013c does not recommend routine intrapartum suctioning.[19]

In a similar study conducted by Aneela et al in 2009 in 500 antenatal women,147 women where in the group of AFI<5 and 6% of them showed meconium staining of liquor,353 women where having AFI>5 and 8.5% of them had meconium staining of liquor.

There also existed a high statistical significance of 0.0005 between gestational age and meconium staining of liquor .22.4% of them showed meconium staining of liquor in gestational age>42 weeks,28.6% of patients in 41-42 weeks of gestational age,49% of patients in gestational age 40-41 weeks.

FIGURE 26-MECONIUM STAINED BABY IN POSTDATISM

Postmaturity syndrome is seen in 5%-10% of prolonged pregnancy. They have decreased amount of subcutaneous fat and wrinkled skin as they have lost the vernix caseosa, long hair and long finger nails. Postdated pregnancy complications ideally should be discovered before labour as these foetuses are fragile, tolerate poor and are acidotic at birth.

FIGURE 27-POSTMATURITY SYNDROME

MODE OF DELIVERY:

There were 174 cases (58%)who delivered by labour naturalis ,and nearly 102 cases (34%) were taken up for Caesarean section,13 (4.3%) cases delivered by outlet forceps and 11 (3.75 %)cases delivered by ventouse. The P value by Chi square test in present study is 0.0005 which is highly significant.

In another study conducted by Bansal et al 2015,47% cases of oligohydramnios delivered by caesarean section and 53% cases delivered by labour naturalis.[2]

In another study conducted by Akhter et al in 2014,51% of postdated cases delivered by labour naturalis,40% by LSCS,9% by ventouse,0% by outlet forceps.[17]

The most important constrain to influence the decision to proceed with caesarean delivery is objective interpretation of fetal heart rate tracing. Similarly, the caesarean delivery for fetal distress would be preferable only after a fetal scalp pH value is obtained.

However, because of non trained personnel, non-availability of the machine, cervical dilatation, or other constraints, the fetal pH may not be attainable before emergency caesarean delivery. Similarly a low Apgar score may be the result of use of narcotics in labor, pre-term birth, or vigorous suctioning of the neonate. Similar results have been shown by Elizabeth et al and Morrris et al. Further studies are required to determine the association of isolated oligohydramnios at term with adverse perinatal outcome.

REACTIVE (VS) NONREACTIVE CTG:

One of the greatest challenges an obstetrician faces is to deliver an active and neurologically well baby. When the neonatal outcome is poor,a clear evaluation of the intrapartum fetal monitoring is done to find out what is missed. Fetal distress is said to occur when FHR is below 100 bpm or more than 160 bpm. Until 20th century, fetal monitoring was done by intermittent auscultation. Then came the continuous electronic fetal heart monitoring which resulted in many unwanted interventions and increased rate of caesarean sections due to early interventions.

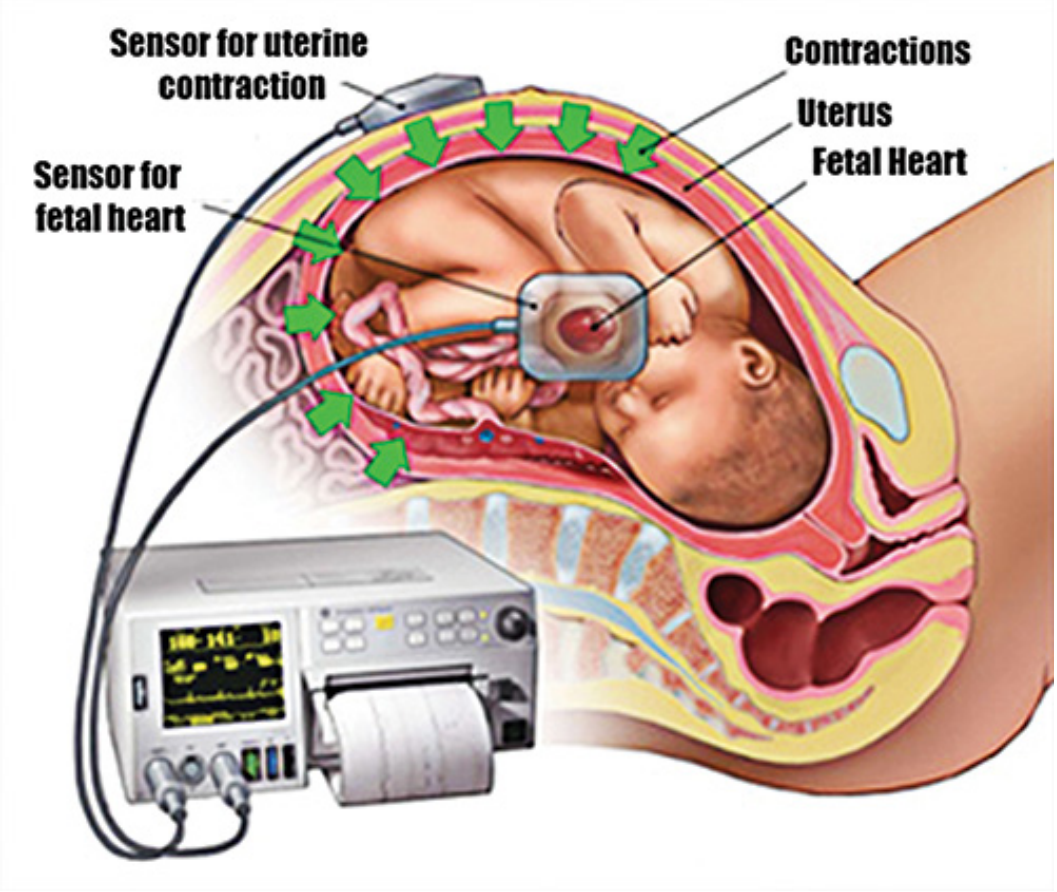
The parameters monitored in cardiotocography are baseline fetal heart rate, beat to beat variability, accelerations, decelerations. The most sensitive indicator of these is the beat to beat variability. The limited efficacy of intrapartum fetal monitoring , as discussed by Parer and King in their paper are lack of standard definitions of FHR, high expectations, poor reliability in the interpretation of the trace, and no validity in detecting fetal hypoxia. This has led to increased rates of caesarean sections.

The ACOG guidelines are as follows: level A recommendation: the false positive rates of detecting fetal distress is very high with continuous Electronic fetal heart rate monitoring which leads to increased unnecessary interventions. Amnioinfusion may be tried in severe variable decelerations which may be useful and reduce caesarean section rates. There is no proven benefit in Electronic fetal heart rate monitoring in reducing cerebral palsy rates. Level B recommendations: Electronic fetal heart rate monitoring should be used only in high risk pregnancies for monitoring in labour.

The Electronic fetal heart rate monitoring device consists of the following:

Uterine activity is monitored using an external tocodynamometer .It measures the frequency and duration of contractions.

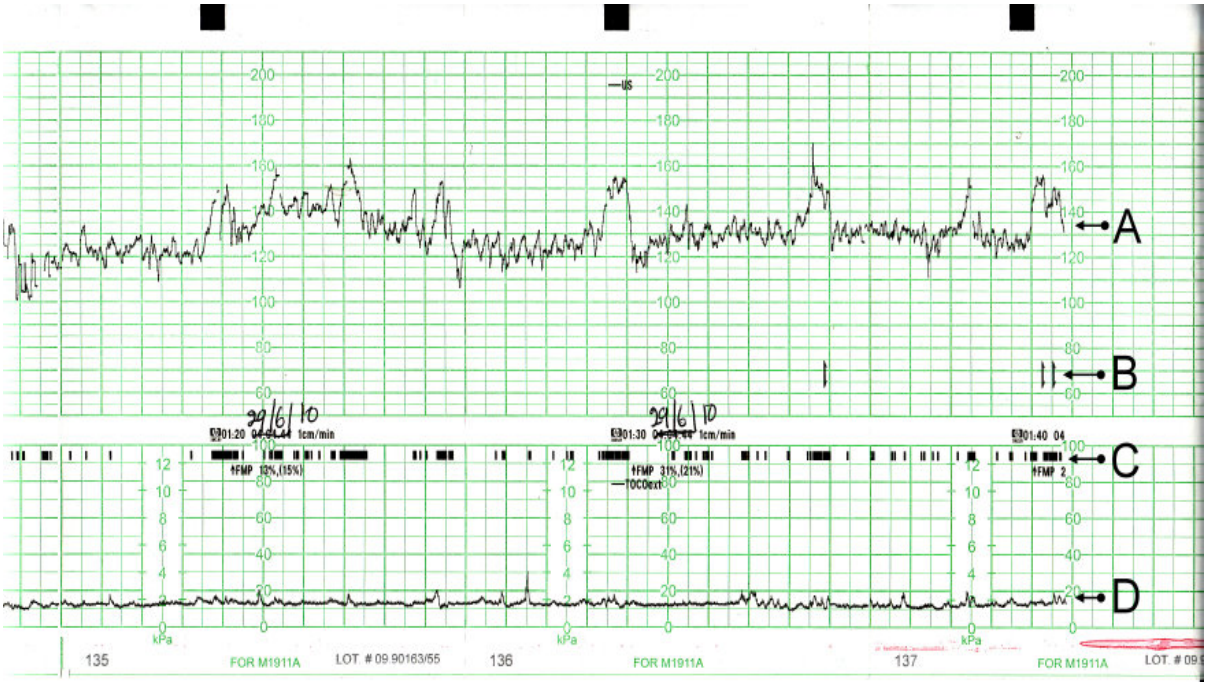
FIGURE 28-CARDIOTOCOGRAPH



The fetal heart rate is measured using a Doppler ultrasound transducer located on the maternal abdomen in a position where the fetal heart is most easily heard. There may be artefacts due to maternal obesity, changes in position and fetal movement.

These measurements are done in a graph paper at a rate of 3cm/minute. The lower part of the CTG is for uterine contractions and has a range of 0-100 mm Hg , and the upper part is for fetal heart rate which has a recording range of 30-240 bpm.

FIGURE 29-CTG ILLUSTRATION



The interpretations of the CTG are as follows:

Uterine contractions-normal 5 contractions in a 30 minute period. More than that is considered as tachysystole.

Baseline fetal heart rate – 110-160 bpm is normal. Less than 110 is bradycardia and more than 160 is tachycardia.

Fetal heart variability reflects the oxygenation to the fetal central nervous system. Moderate or absent variability suggests fetal hypoxia or academia. They may be graded

as absent variability, minimal, moderate , marked accordingly as 5 beats,6-25 beats, >25 beats.

Accelerations is defined as more than 15 bpm each lasting more than 15 secs. Decelerations may be early, variable or late. Early decelerations are due to fetal head compression , late due to placental insufficiency and variable due to cord compression. The late and variable decelerations are dangerous and must be considered upon immediately.

CTG has no benefits in perfectly identifying fetal distress or reducing fetal distress and has increased the rates of caesarean section.

This can be overcome by proper intra partum monitoring with partograph and timely referral to tertiary care unit.

BABY WEIGHT AND AFI IN POSTDATED PREGNANCY:

Amniotic fluid levels decrease by half when a pregnant patient reaches 42 weeks gestation. Usually oligohydramnios is proportional to the severity of placental hypoperfusion and IUGR (Fetal Growth Restriction). The most likely cause of oligohydramnios in IUGR babies is decreased urine output.[20]

Umbilical artery Doppler velocimetry in IUGR is considered as standard in the evaluation and management og growth restricted fetus.The ACOG 2013a notes that umbilical Doppler velocimetry has been shown to improve clinical outcomes.Thus it is an adjunct to other standard surveillance techniques.[21]

Decreased amniotic fluid has been associated with multiple fetal risks like cord compression, musculoskeletal abnormalities such as facial distortion and clubfoot, intrauterine growth restriction, low birth weight, fetal distress ,meconium aspiration syndrome, severe birth asphyxia, low APGAR scores, NICU admission, congenital abnormalities and stillbirths. Long standing oligohydramnios leads to pulmonary hypoplasia, potter's syndrome, club foot and hand and hip dislocation.

Since oligohydramnios is associated with fetal growth restriction and adverse perinatal outcome,this study demonstrates the statistical significance.

In our present study,AFI>8 constituted 7.1% of low birth weight babies,AFI 3 TO 8 constituted 11.1% of low birth weight babies, AFI<3 constituted 11.8% of low birth weight babies and anhydramnios constituted 38.5% low birth weight babies and the statistical significance is 0.002 which is highly significant.

Oligohydramnios is associated with intrauterine growth restriction in 15 babies (16.7%) in a study conducted by Bangal et al in 2018.[15]

The term IUGR is now replaced by FGR-Fetal Growth Restriction.

FIGURE 30-FETAL GROWTH RESTRICTED BABY

According to Vidaeff and Blackwell in 2011,growth restricted fetus may not tolerate the metabolic effects of corticosteroids in the same way as an unstressed fetus.They suggest increased surveillance during administration.[22]

APGAR AND AFI:

The Apgar score is scoring system for assessment of neonatal wellbeing and is a useful clinical tool to identify babies who require resuscitative measures. It comprises of five components; heart rate ,respiratory effort, muscle tone, reflex irritability and color and each component is given a score of 2.

FIGURE 31-APGAR SCORING

	0 (Points)	1	2
Appearance	Blue or pale all over	Blue extremities, but torso pink	Pink all over
Pulse	None	< 100	≥ 100
Grimace	No response	Weak grimace when stimulated	Cries or pulls away when stimulated
Activity	None	Some flexion of arms	Arms flexed, legs resist extension
Respirations	None	Weak, irregular or gasping	Strong cry

0-3 Critically Low, 4-6 Fairly Low, 7-10 Generally Normal

In the present study, APGAR<7 at 5 minutes is seen in 8.4% of babies born to antenatal postdated women with AFI>8 ,42.2% of women with AFI 3 to 8, 58.8% of women with AFI<3 and 92.3% of postdated women with anhydramnios which shows a highly significant P value of 0.0005 .Thus there is a strong association between oligohydramnios and postdatism and it is inversely proportional.

In a study conducted by Bangal et al 2011, 16% of babies born to postdated women with oligohydramnios showed APGAR <7 at 5 minutes.[18]

In a study conducted by Ahmar et al in 2018, 25 babies (27.8%)showed APGAR<7 after 5 minutes.[8]

NICU ADMISSION IN RELATION TO AFI:

Postdated pregnancies carry a high risk of fetal morbidity and mortality thereby increasing the rate of NICU admissions. Obstetrical complications frequently associated with oligohydramnios were pregnancy induced hypertension, postdatism, intrauterine growth restriction, fetal renal anomalies, prematurity and intrauterine death of the fetus.

In the present study 63 babies (21%) were admitted to NICU and was greater (92.3%) among the anhydramnios group when compared to 58.8% admissions in the AFI <3 group, 42.2% in the AFI 3 TO 8 group ,and 9.8% in the AFI >8 group. Chi square test shows high significance value of 0.0005 in the present study.

In a similar study conducted by Ahmar et al in 2018,18 babies(20%) were admitted to NICU.[8]

Chate P et al in 2013[27] and Bansal et al in 2015[2], found 42% and 36% NICU admissions respectively in cases with oligohydramnios.

These babies are more prone for certain complications like intrapartum fetal distress,meconium aspiration syndrome,postmaturity syndrome,physiological jaundice,septicaemia, umbilical sepsis,respiratory tract infections,birth asphyxia.,etc.,

Among the 63 admissions to NICU ,we had 3 neonatal deaths in the present study and the cause of death was attributed mainly to meconium aspiration syndrome/birth asphyxia, hypoxic ischemic encephalopathy and sepsis respectively.

Perinatal mortality in our study is about 3 in 300(1%) and all these had an intrapartum nonreactive CTG.. Ahmar et al in 2018 showed a perinatal mortality of 7.7%.[8]

Thus oligohydramnios in postdated prgenancy is associated with increased maternal morbidity in terms of increase rate of induction of labour and caesarean section. It is also associated with adverse perinatal outcomes such as preterm delivery, low birth weight, fetal distress in labour, meconium passage, low APGAR score, neonatal resuscitation and NICU admission. All these necessitates the importance of this study to help in improving the perinatal as well as maternal outcome of these cases.

CONCLUSION

Oligohydramnios is being most often detected earlier these days due to early assessment of AFI by ultrasonogram. Postdated pregnancies are an exception to this,as the patients turn out late to tertiary care centres from rural outreach areas due to lack of education and awareness regarding the adverse effects of perinatal outcomes due to oligohydramnios in postdated pregnancies. It increases the foetal complication in the form of foetal distress, meconium aspiration syndrome, birth trauma etc. It also increases rate of instrumental delivery and operative delivery.

AFI is a predictor of fetal tolerance in labour and its decrease is associated with increased risk of abnormal heart rate and meconium stained fluid. This is overcome by assessing AFI through ultrasonogram at the earliest in third trimester, biophysical profile scoring, and proper intrapartum fetal heart rate monitoring.Hence this study helped greatly in knowing the significant association between advanced gestational age and oligohydramnios.

Thus the time and mode of induction and delivery in these cases depends on the severity of oligohydramnios and the status of fetal well being which is best assessed by ultrasonogram and fetal heart rate monitoring . This helps in decreasing the perinatal morbidity and mortality due to oligohydramnios in postdated pregnancies.We must be able to achieve this right from antenatal counselling and evaluation and individualised decision regarding the timing and mode of delivery which helps in reducing the rate of caesarean section thereby helping in a better perinatal and maternal outcome.

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ABBREVIATIONS

ACE-Angiotension converting enzyme

AFI-Amniotic Fluid Index

AFV-Amniotic fluid volume

APGAR-Appearance,Pulse,Grimace,Activity,Respiration

CPD-Cephalopelvicdisproportion

CTG-Cardiotocograph

IUGR-Intrauterine growth retardation

LSCS-Lower segment caesarean section

MVP-Maximum vertical pocket

MVU-Monte video units

NICU-Neonatal intensive care unit

SES-Socio economic status

USG-Ultrasonogram

VCTC-Voluntary testing and counselling centre

VDRL-Venereal disease research laboratory

PATIENT CONSENT FORM

Study title: **AMNIOTIC FLUID INDEX IN POSTDATED PREGNANCY AND ITS PERINATAL OUTCOME**

Department of Obstetrics and Gynaecology, GMKMCH, Salem

PARTICIPANT NAME:

AGE:

I.P. NO:

I confirm that I have understood the purpose of the above study. I have the opportunity to ask the question and all my questions and doubts have been answered to my satisfaction.

I have been explained about the possible complications that may occur during and after the study. I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving any reason.

I understand that investigator, regulatory authorities and the ethics committee will not need my permission to look at my health records both in respect to the current study and any further research that may be conducted in relation to it, even if I withdraw from the study. I understand that my identity will not be revealed in any information released to third parties or published, unless as required under the law. I agree not to restrict the use of any data or results that arise from the study.

I hereby consent to participate in this study.

Date : Signature of the Patient

PROFORMA

NAME: AGE: IP NO:

LMP: EDD: ADDRESS:

CONTACT NO:

SOCIOECONOMIC STATUS: Class I/ II/ III/ IV/ V

EDUCATIONAL STATUS:

OBSTETRIC CODE: Primi/ G P L A

GESTATIONAL AGE:

MENSTRUAL CYCLES: Regular/ Irregular

MARITAL HISTORY: Married since

CONSANGUINITY: Consanguinous/ nonconsanguinous

PAST HISTORY:

ASSOCIATED RISK FACTORS: GDM/ PIH/ Breech/ prev LSCS/ postdated

FAMILY HISTORY: Mother/ Father/ Both/ None If yes, specify condition: DM/ HT/ TB/ BA

GENERAL EXAMINATION:

Anemia/ pedal edema

PR: BP:

CVS: RS:

OBSTETRIC EXAMINATION:

FUNDAL HEIGHT:

PRESENTATION:

FHR:

LIQUOR CLINICALLY: Adequate/ not adequate

PER VAGINUM:

INVESTIGATIONS:

Urine albumin, sugar, deposits:

Hemoglobin:

Blood group:

Blood sugar:

Urea: serum creatinine:

ULTRASOUND:

Gestational age:

Placenta:

FH:

AFI:

CTG: Reactive/ nonreactive

MODE OF DELIVERY:

Spontaneous:

Induction:

Vaginal:

Instrumental:

LSCS:

EMERGENCY INDICATION FOR LSCS:

FHR variation: Yes/ No

COLOUR OF LIQUOR: Clear/ thin meconium/ thick meconium If meconium stained liquor amnioinfusion: yes/no

BABY DETAILS: CRIED AFTER BIRTH: Yes/ No

SEX:

BIRTH WEIGHT:

APGAR SCORE: 1 min: 5 min:

BABY ADMISSION IN NICU: Yes/ No

FOLLOW UP:

GOVERNMENT MOHAN KUMARAMANGALAM
MEDICAL COLLEGE & HOSPITAL
SALEM, TAMILNADU
College: Phone No.0427-2383313 Fax No:0427-2383193
E-Mail ID: deangmkmcslm@gmail.com
Hospital: Phone No: 0427 – 2210674, 2210757 Fax : 0427 – 2210876
E-Mail ID: msgmkmchsalem@gmail.com

Communication of Decision of the Institutional Ethics Committee(IEC)

Ref.No.GMKMCH/2623/IEC/01/2016 - 2 **Dated:30.12.2016**

Protocol title	**"AMNIOTIC FLUID INDEX IN POST DATED PREGNANCY AND ITS PERINATAL OUTOME"**
Principal Investigator	Dr. P.Anbarasi, I Year, Post Graduate Student of MS (Obstetrics and Gynaecology)
Name of the Guide / Co - Investigator	Dr. B.JEYAMANI MD., DGO., Professor and HOD of Obstetrics and Gynaecology
Name & Address of Institution	Government Mohan Kumaramangalam Medical College & Hospital, Salem, Tamil Nadu.
Type of Review	☑ New review ☐ Revised review ☐ Expedited review
Date of review (D/M/Y)	25.11.2016
Date of previous review, if revised application:	Nil
Decision of the IEC	☑ Recommended ☐ Recommended with suggestions ☐ Revision ☐ Rejected
Suggestions/ Reasons/ Remarks:	Nil
Recommended for a period of :	3 years

PLEASE NOTE:

- Inform IEC immediately in case of any Adverse events and Serious adverse events.
- Inform IEC in case of any change of study procedure, site and investigator.
- This permission is only for period mentioned above. Annual report to be submitted to IEC.
- Members of IEC have right to monitor the trial with prior intimation.

Signature of Member Secretary

30/12/16

for DEAN,
Govt. Mohan Kumaramangalam
Medical College,
SALEM-636 030.

S.NO	NAME	AGE	IP NO	SOCIO ECONOMIC STATUS	PARITY	GESTATIONAL AGE	AFI	CTG	ONSET OF LABOUR	COLOR OF LIQUOR	MODE OF DELIVERY	INDICATION FOR LSCS	BABY WEIGHT	APGAR	NICU ADMISSION
					PRIMI-1, MULTI-2	**40-41 WKS-1**	**>8-1**	**REACTIVE-1,NONREACTIVE-2**	**SPONTANEOUS-1,FOLEY INDUCTION-2,GEL INDUCTION-3,LSCS-4**	**CLEAR-1**	**LABOUR NATURAL-1,LSCS-2,OUTLET FORCEPS-3,VACCUM-4**	**FETAL DISTRESS-1,FAILED INDUCTION-2,FAILURE TO PROGRESS-3,MOBILE HEAD/CPD-4, ABNORMAL PRESENTATION-5, ANHYDRAMNIOS-6,PREVIOUS LSCS-7**	**2.5-4 KG-1,**	**>7-1**	**NO-1**
						41-42 WKS-2	**<3to8-2**			**MECONIUM-2**			**<2.5KG-2**	**<7-2**	**YES-2**
						>42 WKS-3	**<3-3**								
							NIL-4								
1	Ambika	20	35764	III	1	1	1	1	2	1	1	-	1	1	1
2	Prema	19	35777	IV	1	1	1	1	2	1	1	-	1	1	1
3	Kavitha	22	35800	V	1	1	2	2	4	2	2	1	1	2	2
4	Divyapriya	21	35803	IV	1	1	1	1	1	1	1	-	1	1	1
5	Santhiya	23	35823	V	1	3	3	2	4	2	2	1	2	2	2
6	Tamilselvi	26	35833	III	1	2	1	1	4	1	2	5	1	1	1
7	Durga	19	35870	IV	1	2	1	1	4	1	2	1	1	1	1
8	Divya	21	35888	III	1	2	1	1	3	1	1	-	1	1	1
9	Pavithra	19	35896	IV	2	1	1	1	3	1	1	-	1	1	1
10	Sabeena	19	35901	IV	2	1	1	2	4	2	2	1	1	2	2
11	Nivetha	20	35945	V	2	2	1	1	4	1	2	2	2	1	1
12	Narmatha	18	35962	V	1	1	1	1	1	1	1	-	1	1	1
13	Kasthuri	22	35981	III	1	1	2	2	2	1	4	-	1	2	2
14	Rajeswari	25	36001	III	2	1	1	1	3	1	1	-	1	1	1
15	Janani	20	36023	III	1	2	2	1	2	1	1	-	2	2	2
16	Salma	22	36044	IV	2	1	1	1	1	1	1	-	1	1	1
17	Priya	19	36059	III	1	1	1	2	4	2	2	3	1	1	1
18	Chitra	19	36066	III	1	1	1	1	1	1	1	-	1	1	1
19	Gowri	21	36087	V	1	2	3	2	1	1	4	-	1	2	2
20	Sasi	23	36099	III	1	1	1	1	1	1	1	-	1	1	1
21	Kalpana	22	36111	III	2	1	1	1	4	1	2	2	1	1	1
22	Patchiyammal	31	36123	V	2	1	1	1	2	1	1	-	1	1	1

23	Deepa	31	36139	IV	2	1	1	1	2	1	1	-	1	1	1
24	Ezhil	24	36144	IV	1	1	1	2	4	2	2	4	2	2	2
25	Saranya	24	36189	III	1	1	1	1	1	1	1	-	1	1	1
26	Vanitha	23	36190	IV	1	1	1	1	1	1	1	-	1	1	1
27	Sophiya	24	36199	IV	2	1	1	1	4	1	2	5	1	1	1
28	Gayathri	22	36211	III	2	2	4	2	4	2	2	6	2	2	2
29	Dhanalaksmi	22	36236	III	1	1	1	1	2	1	1	-	1	1	1
30	Baby	22	36247	V	1	1	1	1	3	1	1	-	1	1	1
31	Tharani	23	36274	V	1	1	1	1	3	1	1	-	1	1	1
32	Thamarai	24	36289	IV	2	1	1	1	2	1	1	-	1	1	1
33	Geetha	28	36294	IV	2	1	1	1	4	1	2	4	2	1	1
34	Sangeetha	21	36342	IV	1	1	1	1	2	1	1	-	1	1	1
35	Sridevi	25	36345	III	2	1	1	1	2	1	1	-	1	1	1
36	Sakthi	30	36365	III	1	1	1	2	4	2	2	4	1	2	2
37	Nagalakshmi	26	36376	V	2	1	1	2	4	2	2	2	1	2	2
38	Nandhini	22	36391	V	2	2	4	2	4	2	2	2	1	2	2
39	Jeyam	23	36397	IV	1	1	1	1	2	1	1	-	1	1	1
40	Siva	23	36417	III	2	1	1	1	3	1	3	-	1	1	1
41	Rupa	22	36431	III	1	1	1	1	3	1	3	-	1	1	1
42	Swapna	21	36476	IV	1	1	1	1	2	1	1	-	2	1	1
43	Priya	26	36495	IV	1	1	1	1	2	1	1	-	1	1	1
44	Divya	21	36521	III	1	1	1	1	2	1	1	-	1	1	1
45	Nisha	20	36534	III	1	2	1	1	2	1	1	-	1	1	1
46	Nithya	20	36565	IV	1	1	3	2	4	2	2	5	1	2	2
47	Divya	20	51266	III	1	1	2	2	4	2	2	2	1	2	2
48	Megala	21	51300	V	2	1	1	1	3	2	4	-	1	1	1
49	Chitra	27	21033	V	2	1	2	2	4	2	2	4	1	2	2
50	Saranya	21	21081	III	1	1	1	1	3	1	4	-	1	1	1
51	Chitra	22	51649	V	2	3	4	2	4	2	2	4	1	2	2
52	Malar	18	51630	III	1	1	1	1	2	1	1	-	1	1	1
53	Mani	20	21150	V	1	1	1	1	2	1	1	-	1	1	1
54	Karthika	19	21830	III	1	1	1	1	2	1	1	-	1	1	1
55	Mythili	19	51577	IV	1	1	1	1	3	1	3	-	2	1	1
56	Viji	20	51157	V	1	1	1	1	3	1	3	-	1	1	1
57	Muthu	28	52054	III	2	2	2	2	1	1	1	-	1	2	2

58	Kanmani	27	51924	V	1	2	1	2	4	2	2	2	1	2	2
59	Megala	21	52222	III	1	2	2	2	4	2	2	1	1	2	2
60	Arthi	26	52465	IV	1	1	1	1	3	1	1	-	1	1	1
61	Pachiyammal	27	52597	V	2	1	1	1	3	1	1	-	1	1	1
62	Hajra	20	52493	V	1	1	1	1	2	1	1	-	2	1	1
63	Priya	20	21349	V	1	1	1	1	2	1	1	-	1	1	1
64	Raji	24	21340	III	2	3	4	2	4	2	2	1	1	2	2
65	Sathya	21	52700	V	1	1	1	1	2	2	4	-	1	1	1
66	Venila	25	21343	III	2	1	1	1	2	2	4	-	1	1	1
67	Anushya	21	52460	III	2	1	3	2	4	1	2	1	1	2	2
68	Mahesh	20	21430	IV	1	1	1	1	3	1	1	-	1	1	1
69	Sopna	22	21312	IV	1	1	1	1	3	1	1	-	1	1	1
70	Deepa	20	52646	V	1	1	1	1	2	1	1	-	1	1	1
71	Kavitha	19	52945	III	1	1	1	1	2	1	1	-	1	1	1
72	Eswari	25	52994	IV	2	2	4	2	4	2	2	2	2	2	2
73	Gomathi	21	21761	IV	1	1	1	1	1	1	1	-	1	1	1
74	Revathi	19	52060	V	1	1	1	1	1	1	1	-	1	1	1
75	Meena	27	53181	III	2	2	2	2	4	2	2	2	1	2	2
76	Jothi	20	53185	III	2	1	2	2	1	1	1	-	1	2	2
77	Nandhini	20	53537	V	1	1	1	1	2	1	1	-	2	1	1
78	Vijaya	32	38103	IV	2	1	1	1	1	1	1	-	1	1	1
79	Sasikala	22	37999	IV	1	1	3	2	4	2	2	1	1	2	2
80	Vaitheeswari	21	38044	IV	1	1	1	1	1	1	1	-	1	1	1
81	Rubini	21	38412	III	2	1	3	2	4	2	2	1	2	2	2
82	Suguna	22	38300	IV	2	3	1	1	3	1	1	-	1	1	1
83	Lalitha	26	38358	III	2	1	1	1	1	1	1	-	1	1	1
84	Aiswarya	20	38649	IV	1	1	1	1	3	1	1	-	1	1	1
85	Manjula	20	54680	IV	1	2	3	2	4	2	2	1	1	2	2
86	Keerthana	19	38622	V	1	1	1	1	2	1	2	5	1	1	1
87	Tamilselvi	22	38628	III	1	1	1	1	1	1	1	-	1	1	1
88	Logeswari	20	39060	V	1	1	1	1	2	1	1	-	1	1	1
89	Gowsalya	21	39213	IV	2	1	1	1	1	1	1	-	2	1	1
90	Gayathri	25	39427	III	2	1	1	1	1	1	1	-	1	1	1
91	Kalpana	22	39443	III	2	3	4	2	4	2	2	1	1	2	2
92	Palaniammal	20	39379	IV	1	1	1	1	1	1	1	-	1	1	1

93	Pachaiyamal	31	39498	IV	2	1	1	1	3	1	2	1	1	1	1
94	Ammu	25	57980	IV	1	1	1	1	3	1	3	-	1	2	2
95	Latha	26	35724	IV	2	2	2	1	2	1	2	6	1	2	2
96	Abinaya	20	36541	III	1	1	1	1	1	1	1	-	1	1	1
97	Sujitha	22	33641	III	2	1	1	1	2	1	1	-	1	1	1
98	Rani	19	32899	III	1	1	1	1	3	1	1	-	1	1	1
99	Anitha	20	36555	V	1	1	1	1	2	1	1	-	2	1	1
100	Jeyanthi	26	39485	III	2	1	1	1	3	1	4	-	1	1	1
101	Sathya	27	23402	III	1	2	3	1	2	1	2	1	1	1	1
102	Shanth	26	63365	III	2	2	1	1	1	1	1		1	1	1
103	Dhine	25	63346	II	2	2	1	1	3	1	1		1	1	1
104	Anju	20	61720	IV	1	2	1	1	1	1	1		1	1	1
105	Vanita	26	23198	V	1	2	3	1	2	1	2	5	1	2	2
106	Gnana	22	63434	IV	2	2	1	1	2	1	1		1	1	1
107	Vasugi	22	63667	IV	1	1	2	2	1	1	3		1	2	2
108	Latha	22	63712	II	2	1	1	1	1	1	1		1	1	1
109	Viji	23	63800	II	2	1	1	1	1	1	1		1	1	1
110	Priya	22	63830	III	1	1	1	1	2	1	1		1	1	1
111	Lalitha	22	64239	III	1	1	2	1	1	1	1		1	1	1
112	Nithya	27	64283	III	2	1	2	1	1	1	1		1	1	1
113	Priya	19	64217	IV	2	1	1	2	4	1	2	1	1	2	2
114	Siva	24	64649	IV	2	1	1	1	1	1	1		1	1	1
115	Selvi	21	64732	IV	1	1	3	1	2	1	2	2	1	1	1
116	Diana	21	64906	IV	1	1	3	1	2	1	2	2	1	1	1
117	Viji	20	64775	IV	1	1	1	1	3	1	1		1	1	1
118	Palani	27	64914	IV	2	1	1	1	3	1	1		1	1	1
119	Rupa	20	65176	II	1	2	1	1	2	1	1		1	1	1
120	Vetri	23	65524	II	1	3	1	1	1	1	2	4	1	1	1
121	Valar	18	65522	III	1	1	1	1	4	1	2	4	1	1	1
122	Thang	20	65346	III	1	1	2	1	4	2	2	3	1	1	1
123	Samay	29	65662	III	2	1	2	1	4	1	2	4	1	1	1
124	Ranjita	23	65691	III	2	1	1	1	1	1	1		1	1	1
125	Shahin	24	65806	III	2	1	1	1	1	1	1		1	1	1
126	Archa	21	65204	III	2	1	1	1	3	1	1		1	1	1
127	Raji	20	66004	III	2	1	1	1	1	1	1		1	1	1

128	Kasi	29	66027	III	2	1	1	1	2	1	1		1	1	1
129	Chandra	19	66117	IV	1	1	1	1	1	1	1		1	1	1
130	Sowmya	23	66015	IV	2	1	1	1	2	2	2	2	1	1	1
131	Poongodi	25	66429	II	2	1	1	1	1	1	1		1	1	1
132	Sathya	19	66782	III	1	1	1	1	1	1	1		1	1	1
133	Sandya	23	66780	III	1	2	1	1	3	1	1		1	1	1
134	Anandi	20	66786	IV	1	2	1	1	2	2	4		1	1	1
135	Deepa	20	66720	IV	1	1	2	1	1	1	1		1	1	1
136	Sala	28	66716	IV	2	2	2	1	1	1	1		1	1	1
137	Kavita	22	67038	IV	2	1	1	1	1	1	1		1	1	1
138	Sangita	25	67489	II	2	1	2	1	1	1	1		2	2	2
139	Sandya	21	67431	III	1	2	1	1	1	1	1		1	1	1
140	Baby	35	68056	III	2	3	4	2	4	2	2	6	1	2	2
141	Divya	23	69080	IV	1	1	1	1	3	1	1		1	1	1
142	Buma	19	65219	IV	1	1	1	1	1	1	1		1	1	1
143	Amala	27	65520	IV	2	1	1	1	2	1	1		1	1	1
144	Kirtana	19	65918	III	1	3	4	2	4	2	2	6	1	2	2
145	Thenmoli	26	65940	III	2	1	2	1	2	1	1		1	1	1
146	Vasugi	31	65816	IV	2	1	1	1	3	1	1		1	1	1
147	Urmila	21	66209	IV	2	1	1	1	2	1	1		1	1	1
148	Mahesh	28	65987	IV	2	1	1	1	2	1	1		1	1	1
149	Priyanka	21	66469	III	1	1	2	1	4	1	2	4	1	1	1
150	Durga	19	66045	III	2	1	2	1	4	1	2	4	1	1	1
151	Bargat	30	66677	IV	1	3	4	2	4	2	2	6	2	2	2
152	Satya	21	23800	III	2	1	1	1	3	1	1		1	1	1
153	Sandya	19	66860	III	1	1	1	1	2	1	1		1	1	1
154	Kirthana	20	66993	III	1	1	2	2	4	2	2	1	1	2	2
155	Tamar	20	67189	IV	1	1	1	1	2	1	3		1	2	2
156	Vinita	21	67240	IV	1	2	3	1	4	2	2	3	1	1	1
157	Sivaranjani	23	67360	V	1	2	2	1	3	1	2	2	1	1	1
158	Tamil	22	67215	V	2	2	1	1	2	1	1		1	1	1
159	Malli	31	67912	IV	1	2	2	1	4	1	2	4	1	1	1
160	Kavita	22	68011	V	2	1	1	1		1	1		1	1	1
161	Sabira	23	67673	V	2	1	1	1	2	1	1		1	1	1
162	Kalai	29	67722	V	2	1	1	1	2	1	1		1	1	1

163	Sudandi	20	67924	III	1	1	1	1	2	1	1		1	1	1
164	Kirtana	19	68103	III	1	1	1	1	2	1	1		2	1	1
165	Visal	20	68171	IV	1	1	2	2	4	2	2	1	1	2	2
166	Indra	21	68582	IV	1	1	2	1	4	1	2	4	1	1	1
167	Ramya	20	68492	V	1	1	2	1	2	1	2	2	2	1	1
168	Kavita	19	68635		1	1	1	1	2	1	1		2	1	1
169	Mani	20	69118	V	1	1	1	1	2	1	1		1	1	1
170	Snega	19	68836	V	1	1	1	1	2	1	1		2	1	1
171	Angam	19	69563	V	1	1	3	1	4	1	2	4	1	1	1
172	Padma	25	70047	IV	1	1	3	1	4	1	2	4	1	1	1
173	Hajira	22	70234	IV	2	1	1	1	2	1	1		1	1	1
174	Surya	24	70579	IV	1	3	4	2	4	2	2	6	2	2	2
175	Selva	23	11209	III	2	1	1	1	1	1	3		1	1	1
176	Divya	23	11201	III	1	1	1	1	1	1	1		1	1	1
177	Pushpa	21	11195	II	1	1	1	1	2	1	1		1	1	1
178	Kamali	20	11190	III	1	1	1	1	2	1	1		1	1	1
179	Gowri	23	11181	IV	1	1	1	1	2	1	1		1	1	1
180	Soundarya	19	11176	IV	1	1	1	1	2	1	1		1	1	1
181	Vaidegi	22	11147	V	2	1	1	1	3	1	1		1	1	1
182	Maari	23	11118	V	2	1	1	1	3	1	1		1	1	1
183	Uma	19	11102	V	1	1	1	1	4	2	2	3	1	2	2
184	Pushpa	22	11097	III	2	1	1	1	3	1	1		1	1	1
185	Saranya	19	69574	V	1	1	1	1	1	1	1		1	1	1
186	Dhana	26	69169	II	2	1	2	1	2	2	1		1	1	1
187	Selva	28	69827	III	1	1	1	1	1	1	1		1	1	1
188	Divya	23	69808	III	1	1	1	1	1	1	1		1	1	1
189	Suguna	25	68819	III	1	1	1	1	4	1	2	7	1	2	2
190	Maha	23	68778	IV	2	1	1	1	2	1	1		1	1	1
191	Poongodi	23	70735	III	1	1	1	1	2	1	1		1	1	1
192	Priya	31	70678	IV	2	1	1	1	3	1	1		1	1	1
193	Saraswathi	24	70651	IV	2	1	1	1	2	1	1		1	1	1
194	Mariyammal	22	70780	III	1	1	1	1	4	2	2	5	1	2	2
195	Vanita	27	71039	V	1	1	1	1	4	1	2	2	1	1	1
196	Tamil	31	71273	III	2	1	2	2	4	1	2	1	2	2	2
197	Jakiya	26	71359	III	1	2	1	1	2	1	1		1	1	1

198	Revati	23	71665	V	1	2	1	1	2	1	1		1	1	1
199	Siva	35	71863	IV	1	2	1	1	1	1	1		1	1	1
200	Viji	24	71884	V	1	3	1	2	4	2	2	1	1	1	1
201	Aarthi	24	55889	III	2	2	1	1	1	1	1		2	1	2
202	Mahala	23	22881	III	2	2	1	1	1	1	1		2	1	2
203	Sandya	19	22010	III	1	1	1	1	4	1	2	4	1	1	1
204	Amutha	22	55826	III	2	1	2	1	4	1	2	3	1	1	1
205	Chitra	22	55852	IV	1	1	1	1	4	1	2	3	1	1	1
206	Balama	22	56103	IV	1	2	1	1	2	1	1		1	1	1
207	Arthi	19	54260	V	1	2	1	1	3	1	2	2	1	1	1
208	Yogeswar	21	53587	V	1	2	1	2	4	2	2	1	1	2	2
209	Sasikala	31	55838	IV	2	1	1	1	1	1	1		1	1	1
210	Sound	20	56126	III	1	1	1	1	1	1	1		1	1	1
211	Sevandi	23	53967	III	2	1	2	1	3	1	3		1	1	1
212	Shalini	20	56254	IV	2	1	1	1	2	1	1		2	2	2
213	Vasugi	21	54101	IV	1	2	1	1	3	1	1		1	1	1
214	Tamil	20	56403	IV	1	1	2	1	2	1	1		1	1	1
215	Mohana	21	22053	III	1	1	1	1	2	1	1		1	1	1
216	Ramya	23	56233	III	1	2	1	1	3	2	2	1	1	2	2
217	Sound	22	22170	II	1	3	1	1	2	1	1		1	1	1
218	Chitra	26	56460	IV	2	1	4	1	4	1	2	4	1	1	1
219	Chitra	21	22038	IV	2	1	1	1	1	1	1		1	1	1
220	Kaliyamal	19	22376	V	1	1	1	1	3	1	2	2	1	1	1
221	Salima	19	53852	V	1	1	1	1	4	1	2	4	1	1	1
222	Kavya	20	22429	V	1	1	1	1	3	1	2	2	1	1	1
223	Divya	22	22186	IV	1	1	1	1	1	1	1		1	1	1
224	Sathya	32	56727	III	2	1	1	1	4	1	2	7	1	1	1
225	Radika	26	54189	III	2	1	1	1	3	1	1		1	1	1
226	Satya	23	22471	III	2	1	1	1	3	1	1		1	1	1
227	Bhuvi	23	22470	III	1	2	2	1	1	1	2	1	1	2	2
228	Kritika	23	54414	III	1	1	1	1	2	1	2	4	1	1	1
229	Pavithra	22	54415	III	2	1	1	1	2	1	1		1	1	1
230	Megala	21	54392	IV	1	1	2	1	3	1	2	4	1	1	1
231	Sevandi	24	54423	III	1	1	1	1	3	1	2	1	1	2	2
232	Saranya	27	54488	III	1	2	1	1	3	2	1		2	1	2

233	Akila	22	54425	III	1	1	1	1	3	1	1		1	1	1
234	Jeya	24	54691	III	1	1	2	1	4	1	2	4	1	1	1
235	Kalai	20	54813	IV	1	1	1	1	3	1	2	1	1	2	2
236	Soundra	27	54518	V	1	2	1	1	1	1	4		1	1	1
237	Niveda	20	54493	V	1	1	1	1	2	1	2	2	1	1	1
238	Shobana	24	55052	V	2	1	1	1	4	1	2	5	1	1	1
239	Thenmoli	21	54695	III	2	1	1	1	2	1	2	1	1	2	2
240	Karthiga	20	54697	III	1	3	3	2	4	2	2	1	1	2	2
241	Raji	19	54749	IV	1	1	1	1	1	1	3		1	1	1
242	Gayathri	19	55178	IV	1	1	1	2	4	1	2	1	1	2	2
243	Mangai	30	5533	IV	2	1	1	1	3	1	1		1	1	1
244	Malar	24	55605	III	1	2	1	1	1	1	1		1	1	1
245	Gayathri	23	55711	III	1	2	1	1	4	1	2	4	1	1	1
246	Gokila	23	57117	III	1	2	1	1	1	1	1		1	1	1
247	Gokila	21	57094	IV	1	2	2	1	2	1	1		1	1	1
248	Devayani	27	57650	IV	1	1	1	1	2	1	4		1	1	1
249	Soniya	22	57901	V	2	1	1	1	1	1	2	5	1	1	1
250	Noosarat	21	58284	IV	1	1	2	1	1	1	2	4	1	1	1
251	CHANDRA	22	58570	III	2	1	1	1	1	1	1		1	1	1
252	Mahesh	21	58288	III	1	1	1	1	2	1	1		1	1	1
253	Rehana	24	58119	III	1	3	2	1	2	2	2	1	1	2	2
254	MARI	22	58527	III	2	2	1	1	4	2	2	1	1	1	2
255	Thavam	20	58804	III	1	3	1	1	1	1	3		1	1	1
256	Saranya	23	57111	III	1	2	1	1	3	1	1		1	1	1
257	Chellam	37	57386	III	2	2	1	1	1	1	1		1	1	1
258	Sasikala	30	57738	IV	2	1	1	1	3	1	1		1	1	1
259	Kalai	24	58544	IV	1	1	1	1	2	1	1		1	1	1
260	Priya	26	543211	III	1	2	1	1	2	1	1		1	1	1
261	Kanchan	25	58765	III	1	2	1	1	2	1	1		1	1	1
262	Pavithra	26	57666	IV	1	1	2	1	2	1	1		1	1	1
263	Alamelu	28	58423	IV	2	1	1	1	3	1	1		1	1	1
264	Priya	30	57777	IV	2	1	1	1	3	1	1		1	1	1
265	Selvi	26	58111	IV	1	1	2	1	2	1	1		1	1	1
266	Krishna	24	57654	V	1	1	1	1	2	1	1		1	1	1
267	Pavitra	25	56599	IV	1	3	1	1	3	1	1		1	1	1

268	Menaka	30	58432	IV	2	1	1	1	2	1	1		1	1	1
269	Sweta	24	57654	IV	1	1	1	1	4	1	2	2	1	1	1
270	Nirmala	26	58721	IV	2	1	2	1	2	1	1		1	1	1
271	Priyanka	19	57822	III	1	1	1	1	1	1	1		1	1	1
272	Niveda	22	58811	III	1	1	1	1	1	1	1		1	1	1
273	Yamuna	24	57654	III	1	2	1	1	1	1	1		1	1	1
274	Kavinila	30	58432	III	2	2	3	2	4	2	2	1	1	2	2
275	Amuta	34	57911	III	2	1	4	2	4	2	2	1	1	2	2
276	Balama	30	58426	IV	2	1	1	1	1	1	1		1	1	1
277	Chitra	19	58724	IV	1	1	1	1	1	1	4		1	1	1
278	Devaki	20	57866	II	1	1	2	2	4	1	2	1	2	2	2
279	Divya	24	56711	III	1	1	1	1	2	1	1		1	1	1
280	Nitya	23	56822	IV	1	3	1	1	2	1	1		1	1	1
281	Maari	24	57112	V	1	2	1	1	1	1	1		1	1	1
282	Revati	22	56172	IV	1	2	1	1	1	1	1		1	1	1
283	Siva	29	57186	V	1	1	1	1	3	1	1		1	1	1
284	Shanthi	30	57111	V	2	1	2	2	4	2	2	1	1	2	2
285	Kamali	35	56541	III	1	1	1	1	1	1	1		1	1	1
286	Parimal	24	54266	III	2	1	1	1	1	2	2	1	1	1	1
287	Kavita	26	52612	II	2	1	1	1	1	1	2	1	1	1	1
288	Bharathi	31	53112	IV	1	1	1	1	1	1	2	1	1	1	1
289	Sivagami	30	54266	IV	1	1	1	1	1	1	1		1	1	1
290	Prema	27	53216	III	1	2	4	2	2	1	2	6	2	2	2
291	Geetha	26	54918	III	1	3	2	1	1	1	3		1	1	1
292	Gomathi	19	58761	III	1	1	1	1	1	1	2	1	1	1	1
293	Pravena	20	52461	III	1	1	1	1	1	1	1		1	1	1
294	Parvati	34	59606	IV	1	2	2	1	1	1	1		1	1	1
295	Banu	35	58914	IV	1	2	1	1	1	1	1		1	1	1
296	Devi	19	58861	III	2	1	1	1	1	1	2	2	1	2	1
297	Jeenat	20	59846	III	1	1	1	1	1	1	3		1	1	1
298	Mary	26	55462	III	1	1	3	2	2	4	2	1	1	1	1
299	Arul	24	59129	III	2	2	1	1	1	1	1		1	1	1
300	Kalai	25	58411	IV	2	2	1	1	1	1	1		1	1	1